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90-1657

Supreme Court, U.S.
FILED
APR 25 1991
OFFICE OF THE CLERK

In the Supreme Court of the United States.

October Term, 1990

COMMONWEALTH OF MASSACHUSETTS
SEACOAST ANTI POLLUTION LEAGUE,
NEW ENGLAND COALITION ON
NUCLEAR POLLUTION, TOWN OF HAMPTON
Petitioners,

v.

NUCLEAR REGULATORY COMMISSION, et al.
Respondents.

Appendix to Petition
for a Writ of Certiorari to the
United States Court of Appeals for
the District of Columbia Circuit
Volume I

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COMMONWEALTH OF MASSACHUSETTS, et al., Petitioners,

v.

UNITED STATES NUCLEAR REGULATORY COMMISSION and the United States of America, Respondents,

Public Service Company of New Hampshire, Towns or Cities of Ashburnham, et al., Intervenors.

Nos. 89-1306, 90-1132 and 90-1218.

United States Court of Appeals, District of Columbia Circuit.

Argued Sept. 18, 1990.

Decided Jan. 25, 1991.

Petitions for review of Nuclear Regulatory Commission's (NRC) licensing

of nuclear power plant were consolidated. The Court of Appeals, Buckley, Circuit Judge, held that: (1) NRC's interpretation of emergency response plan was not plainly inconsistent with regulatory language; (2) agency interpretation was not contrary to mandate of Authorization Act; and (3) remand was required for determination of whether appeal board properly considered potential materiality of allegations concerning on-site weaknesses identified in full participation exercise.

Petitions denied in part and granted in part.

Before BUCKLEY, WILLIAMS and RANDOLPH, Circuit Judges.

Opinion for the Court filed by Circuit Judge BUCKLEY.

BUCKLEY, Circuit Judge:

This action consolidates three petitions for review of the Nuclear Regulatory Commission's licensing of Seabrook Nuclear Power Station. Petitioners are the Commonwealth of Massachusetts, the Seacoast Anti-Pollution League ("SAPL"), and the New England Coalition on Nuclear Pollution ("NECNP"), all intervenors in the agency's licensing proceedings. Public Service Company of New Hampshire ("PSNH") has intervened here as leader of the consortium of utilities that owns and operates Seabrook.

In No. 90-1132, petitioners raise three issues concerning the Commission's authorization of the plant's full power license. They challenge the Commission's decision to allow

authorization of the full power license despite a prior agency ruling requiring further consideration of Seabrook's offsite emergency response plans. They also challenge a ruling excluding from the licensing record evidence about the potential consequences of hypothetical radiological emergencies at Seabrook. Finally, they challenge the Commission's denial of a waiver of regulations exempting PSNH, as a regulated utility, from the requirement of demonstrating financial qualifications.

In No. 89-1306, petitioners raise two issues relating to the plant's low power licensing. They claim the Commission misconstrued the scope of a contention they had filed concerning the possible fouling of Seabrook's cooling system, and they claim the Commission

improperly authorized the low power license without conducting an adjudicatory hearing on potential flaws in Seabrook's onsite emergency plan, allegedly revealed in a June 1988 emergency exercise. The third consolidated petition, No. 90-1218, was filed as a precaution to preserve petitioner's opportunity for appellate review of the full power issues; it simply duplicates No. 90-1132.

We deny in their entirety the petitions in Nos. 90-1132 and 90-1218 for review of the full power license issues. In No. 89-1306, we deny the petition for review of the Commission's action concerning the cooling system contention; we grant review, however, of the decision concerning the exercise contention, and we remand to the agency

for further explanation of its reasoning on this issue. In the interim, we will allow the operating licenses for Seabrook to remain effective.

I. BACKGROUND

A. Regulatory Overview

Under section 182(a) of the Atomic Energy Act of 1954 ("AEA"), as amended, 42 U.S.C. §§ 2011-2296 (1988), the Nuclear Regulatory Commission ("NRC: or "Commission") is authorized to approve the operation of nuclear power plants that the agency finds "will provide adequate protection to the health and safety of the public." 42 U.S.C. § 2232(a). See also 10 C.F.R. § 50.57(a)(3) (1990). In accordance with the notice and hearing requirements of section 189 of the AEA, 42 U.S.C. §§ 2239, the procedural requirements of

the Administrative Procedure Act, 5 U.S.C. §§ 551-559, and the procedures set forth in its own regulations, 10 C.F.R. Part 2, the NRC conducts formal adjudicatory hearings on all contested issues, called "contentions," that are raised by interested parties in response to applications for a nuclear plant operating license. Licensing hearings are conducted by a three-member Atomic Safety and Licensing Board ("Licensing Board") whose duties are to admit and decide contentions and, if the contentions are resolved in the applicant's favor, to authorize the requested license. See 10 C.F.R. §§ 2.750, 2.772. Appeals from Licensing Board decisions are heard by a panel of the Atomic Safety and Licensing Appeal Board ("Appeal Board"), id. §§ 2.785, 2.787, and the Commission may, in its discretion, undertake further review, id. § 2.786.

A Licensing Board authorization of a low power testing license, which permits operation of a plant at up to five percent of rated power, becomes immediately effective notwithstanding any appeals taken within the NRC. Id. § 2.764(a),(f). Such authorizations are subject to motions for stay, and the Commission reserves the power to step in at any time. Id. § 2.764(f)(2). Authorization of an operating license that permits more than five percent power operations does not become effective until the Commission itself has conducted an "immediate effectiveness" review of the Licensing Board's initial decision. Id. § 2.764(f)(2)(i), (ii). After a positive immediate effectiveness review, the authorization becomes effective without prejudice to any

pending administrative appeal of the Licensing Board's decision or any further motions or formal adjudication. Id. § 2.764(g).

An applicant for a nuclear plant operating license must provide detailed plans for coping with radiological emergencies on the plant site and for ensuring offsite emergency preparedness. See id. § 50.34(b)(6)(v); id. Part 50, Appendix E.III, .IV. The NRC requires the applicant to submit emergency response plans prepared by state and local governments whose jurisdictions lie within designated emergency planning zones ("EPZs") surrounding the plant. Id. § 50.33(g). The "plume exposure pathway" EPZ is generally a circular zone with a radius of approximately ten miles; the

"ingestion pathway" EPZ is a larger circle measuring approximately fifty miles in radius. The exact configurations of the EPZs depend on the particular characteristics of each site. Id. §§ 50.33(g), 50.47(c)(2). Offsite planning primarily focuses on protective measures for people within the plume exposure pathway. EPZ. See, e.g., id. § 50.47(b)(5), (10). In the ingestion pathway EPZ, the focus is on protecting the food sources from fallout. See id. §§ 50.33(g), 50.47(c)(2).

The NRC will not authorize an operating license unless it finds "reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency." Id. § 50.47(a)(1). The

NRC's findings on the adequacy of protective measures are based on a determination by the Federal Emergency Management Agency ("FEMA") that the state and local response plans for the offsite EPZs are adequate and can be implemented, and on an NRC assessment of the adequacy and implementability of the applicant's onsite emergency plans. Id. § 50.47(a)(2). A FEMA finding constitutes a rebuttable presumption on the adequacy of an offsite plan. Id. Low power licensing requires the approval of an onsite emergency plan but does not require any assessment of offsite emergency preparedness. Id. § 50.47(d).

Paragraph (b) of the emergency planning regulation sets forth sixteen specific standards that response plans

must meet. Id. § 50.47(b).[1]Ö

Paragraphs (a) and (b) of the emergency planning regulation set out in their entirety in the accompanying Appendix.
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Failure to meet these standards "may result in the Commission[s] declining to issue an operating license," but the applicant will have the opportunity to demonstrate that the license should still issue where, inter alia, "deficiencies in the plans are not significant for the plant in question." Id. § 50.47(c)(1). Further detailed guidance for emergency planning is contained in 10 C.F.R. Part 50, Appendix E.IV ("Content of Emergency Plans") and in emergency preparedness guidelines developed and published jointly by FEMA and the NRC, NRC & FEMA, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans

and Preparedness in Support of Nuclear Power Plants, NUREG-0654/FEMA-REP-1 (rev. 1 Nov. 1980) (NUREG-0654"). Where state or local governments in the EPZs refuse to participate in emergency planning, the applicant must substitute its own offsite response plan, and such a "utility plan" is also evaluated against the paragraph (b) standards. 10 C.F.R. § 50.47(c)(1)(iii).

B. Full Power Licensing Proceedings

The full power licensing issues before the court principally involve the Licensing Board's approval of Seabrook's offsite emergency plans. The New Hampshire Radiological Emergency Response Plan Revision 2 ("NH Plan") is a state plan covering the New Hampshire communities within the plume exposure pathway EPZ. The Seabrook Plan for

Massachusetts Communities ("Utilities Plan") is a plan that was developed by PSNH and the other owner-utilities pursuant to 10 C.F.R. § 50.47(c) after Massachusetts and the Massachusetts communities within the EPZ declined to participate in emergency planning.

During adjudicatory hearings on the adequacy of the NH Plan, petitioner Massachusetts proffered evidence of potential radiation doses that would result from specific hypothetical accidents at Seabrook. The evidence was intended to support petitioners' contentions that the NH Plan could not adequately protect the large numbers of persons who visit the ocean beaches near Seabrook on summer weekends. The evidence consisted of written testimony from four expert witnesses: Steven C.

Sholly, Dr. Jan Beyea, Dr. Gordon Thompson, and Dr. Jennifer Leaning (collectively "Sholly/Beyea testimony"). Joint Appendix ("JA") at 160. (Unless indicated otherwise, citations to the joint appendix refer to case no. 90-1132.

Mr. Sholly's testimony was offered to explain that the generic emergency preparedness guidelines on which section 50.47 rests were developed on the basis of dose-distance assessments performed for a range of accident scenarios. JA at 171. Dr. Beyea would then predict the level of protection the NH Plan would actually provide to the peak summertime beach population in terms of the potential radiation doses that could result from various accident scenarios. Id. at 172. Dr. Thompson's testimony

proposed to address the likelihood and characteristics of a catastrophic atmospheric release of radiation at Seabrook. Id. at 174. Finally, Dr. Learning was to describe the health effects that such accidents would have on the beach population. Id. The stated premise of these experts' testimony was that a site-specific examination of the potential dose consequences of various accidents would illuminate the effectiveness of the offsite emergency measures planned. Id. at 187.

The Licensing Board refused to admit the Sholly/Beyea testimony on the ground that such evidence is not relevant to the review of emergency response plans under section 50.47. JA at 144-59. On interlocutory appeal, the Appeal Board certified to the Commission the question whether the evidence should be admitted in light of a prior Commission opinion,

Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), CLI-86-13, 24 N.R.C. 22, 30 (1986) ("Shoreham") in which the Commission had stayed that a goal of emergency planning is "reasonable and feasible dose reduction under the circumstances." See Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2, ALAB-922, 30 N.R.C. 247, 255-59 (1989).

In the meantime, on December 30, 1988, the Licensing Board issued a 141-page partial initial decision approving the NH Plan. Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), LBP-88-32, 28 N.R.C. 667 (1988).[+/Ö]

Each of the NRC rulings related to Seabrook bears the caption "Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2)," followed by its respective decision number, with the prefix "LBP" denoting the Licensing

Board, "ALAB," the Appeal Board, and "CLI," the Commission. For ease and clarity, we will simply refer to all of the Seabrook rulings by their decision numbers.
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The Board made findings on twenty-six litigated contentions relating to eight general aspects of the plan. See id. at 669-70. While the Board found it necessary to make four specific revisions of the plan and to retain jurisdiction over a subissue relating to one of those revisions, it concluded that, subject to later verification that the necessary revisions had been made, the plan met the requirements of 10 C.F.R. § 50.47(b) and Part 50, Appendix E, and reasonably assured that adequate protective measures were available for the New Hampshire portion of the EPZ. See 28 N.R.C. at 804-05.

Petitioners appealed this decision while hearings continued on other segments of offsite emergency planning. On November 7, 1989, the Appeal Board handed down an opinion reviewing four of the eight categories of issues resolved in LBP-88-32. ALAB-924, 30 N.R.C. 331 (1989). The Appeal Board generally affirmed the Licensing Board's findings and conclusions but reversed and remanded four issues "for further action consistent with this opinion." Id. at 373. The remanded issues involved the possible need for letters of agreement with school personnel involved in evacuating schoolchildren; the accuracy of a survey intended to identify persons with special transportation needs; the accuracy of evacuation time assumptions for advanced life support patients in

hospitals, nursing homes, and other special facilities; and the need for further implementing details in the plan for emergencies which sheltering would be preferred protective action for the beach population. Id. The Appeal Board did not specify that its opinion precluded issuance of a full power license but did note that the lack of implementing details fo beach sheltering "is a deficiency that must be remedied." Id. at 372 n. 194

Two days after ALAB-924, on November 9, 1989, the Licensing Board issued a 281-page partial initial decision. The decision addressed sixty-two litigated contentions proferred by petitioners relating to the Utilities Plan and a 1988 FEMA-graded, full participation exercise of Seabrook's emergency plans

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(such an exercise being a prerequisite to full power licensing under 10 C.F.R. Part 50, Appendix E.IV.F.1). See LBP-89-32, 30 N.R.C. 375, 380-84 (1989). The Board concluded that the 1988 graded exercise was adequate in scope and revealed no fundamental flaw in the Utilities Plan or the NH Plan; that the 1988 exercise demonstrated that the NH Plan was adequate and implementable; and that the Utilities Plan satisfied the requirements of section 50.47(b) and Appendix E, and reasonably assured that adequate protective measures would be available for the Massachusetts portion of EPZ. See 30 N.R.C. at 650. Having thus resolved all remaining licesening issues in the applicant's favor (other than the four remanded by the Appeal

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Board), the Licensing Board authorized a full power license for Seabrook. Id. at 651. The Board took note of the four remanded issues and promised to provide a supplemental decision explaining why ALAB-924 did not preclude the immediate issuance of an operating license. Id. at 651 & n. 87.

Petitioners moved the Appeal Board to vacate authorization of the full power license, but the Appeal Board refused to act before receiving the Licensing Board's supplemental opinion. JA at 1048. Subsequently, the Commission decided sua sponte to assume jurisdiction over petitioner's motion to vacate; the Commission reasoned that because it was already scheduled to decide the immediate effectiveness of LBP-89-32 and the Sholly/Beyea

evidentiary question, its resolution of the motion to vacate would serve the interests of efficiency. JA at 1051. Thereafter, in its supplemental decision of November 20, 1989, the Licensing board analyzed the four remanded issues in light of its familiarity with the extensive factual record and concluded that none of the deficiencies was sufficiently significant to preclude licensing and that any further action concerning such issues could be conducted through post-licensing hearings. LBP-89-33, 30 N.R.C. 656 (1989).

On March 1, 1990, the Commission handed down its decision on the certified question concerning the Sholly/Beyea testimony. CLI-90-2, 31 N.R.C. 197 (1990). The Commission

upheld the Licensing Board's ruling that the testimony was inadmissible, holding that "judgments on the adequacy of emergency planning are to be based on conformity with the sixteen planning standards set forth in 10 C.F.R. § 50.47.(b)" Id. at 213. Relying on its own guidelines and rulemaking statements supporting section 50.47 and on prior adjudicatory decisions, including its Shoreham opinion, the Commission reasoned that

> consideration of specific accident sequences and their potential dose consequences has been rendered unnecessary by the promulgation of generic guidance that incorporates and synthesizes data on a range of accidents and their consequences. Thus the seeming anomaly of excluding proferred evidence on dose consequences, where the objective of the inquiry is to reduce dose consequences, is in fact no anomaly at all. For it is by applying the generic guidance of the regulation's

> sixteen standards to the review of individual emergency plans - not by attempting to predict the effects of particular hypothetical accidents occurring under particular hypothetical conditions of weather, time of year, and time of day-that the NRC satisfies itself that the goal of achieving dose reductions is met.

Id. at 215.

On the same day it decided this evidentiary question, the Commission issued a ruling denying petitioners' motion to vacate and allowing the immediate effectiveness and the Licensing Board's decisions. CLI-90-3, 31 N.R.C. 219 (1990). On the motion to vacate, the Commission concluded that the Licensing Board had not violated any "clear, nondiscretionary duty" in authorizing the license. Id. at 229-31. The Commission reasoned that "nothing in ALAB-924 by its terms precludes a full power authorization";

that no NRC rule or decision "suggests . . . [a] duty on the part of the Licensing Board to delay full power authorization pending completion of remand proceedings"; and that, "most important for this case," the Licensing Board's authority to act despite a remand from the Appeal Board was properly supported by 10 C.F.R. § 50.47(c)(1). 31 N.R.C. at 230. While agreeing that the remanded issues were remanded probative of compliance with section 50.47(b), and thus would be relevant to licensing, the Commission noted that they were "not necessarily material to license issuance because, under § 50.47(c) [some] compliance issues may not be significant and therefore need not be resolved prior to license

issuance." Id. at 230-31 (emphasis added).

In its immediate effectiveness review, the Commission found that the Licensing Board had acted reasonably in determining that the remanded issues were not significant and that this determination did not preclude the immediate issuance of a license. See id. at 232-48. The Commission further held that the Licensing Board's findings and conclusions in LBP-89-32 on the adequacy of the Utilities Plan and the FEMA-graded exercise not yet reviewed by the Appeal Board, also met the immediate effectiveness criteria set forth in 10 C.F.R. § 2.764(f)(2). See id. at 248-54. As a result, the Commission allowed the full power license to take effect, "with , however, the recognition

that administrative appeal processes (in which later review of the Licensing Board's decision[s] will take place) will continue." Id. at 225.

On March 15, 1990, the full power license issued. JA at 752. This court denied a stay pending appeal, and Seabrook thereafter began its ascension to full power. Administrative appeals and further adjudication before the Licensing Board are ongoing.

The last NRC action petitioners ask us to review in connection with the full power proceedings is the Commission's denial of their request for a waiver of the financial qualification regulation. CLI-89-20, 30 N.R.C. 231 (1989). The NRC exempts regulated electric utilities, like PSNH, from its general rule requiring license applicants to

demonstrate financial qualification. 10 C.F.R. §§ 50.33(f), 50.40(b). The rationale for the exemption is that a regulated utility usually can recover through its rate base the costs of safely operating a nuclear facility. 49 Fed. Reg. 35,747, 35,748 (1984). Massachusetts and SAPL argued that a waiver was justified pursuant to 10 C.F.R. § 2.758(b) because the rationale for the exemption had been undercut by "special circumstances," namely, the fact that PSNH had filed bankruptcy. JA at 397-537. The Licensing Board ruled that petitioners failed to make a prima facie showing for a waiver, LBP-89-10 29 N.R.C. 297 (1989), but the Appeal Board certified the issue to the Commission, ALAB-920, 30 N.R.C. 121 (1989).

Petitioners relied on a prior opinion rendered during Seabrook's low power proceedings in which the Commission had found that the purpose of the exemption was undermined by the combination of PSNH's bankruptcy and New Hampshire's "antiCWIP" statute (which prohibits a utility from increasing customers' rates to recover the costs of construction work in progress). See CLI-88-10, 28 N.R.C. 573, 592-98 (1988). In denying the later petition, the Commission held that its low power decision did not support a waiver of the financial qualification exemption during full power operations because "[n]othing in the anti-CWIP law . . . prohibits including Seabrook's operating costs in the rate base when the plant is operating to serve the public, as it

will be fully authorized to do if it receives its full power license." 30 N.R.C. at 241 (emphasis in original). The Commission also held that the exemption would not be undercut by a normal delay in cost recovery imposed by the New Hampshire ratesetting process, id., and that even if the rule were undercut by exceptional circumstances, petitioners had failed to show that a significant safety problem would result, id. at 243-44.

C. Low Power Licensing Proceedings

A low power license permits an applicant to initial fuel loading and low-level testing before ascension to full power operation. Because certain requirements for full power licensing, such as adequate offsite emergency plans, are not relevant to low power

operation, the NRC may, upon motion by the applicant, issue a low power testing license prior to the authorization of a full power license, provided that all contested issues material to low power operations have been resolved in the applicant's favor. See 10 C.F.R. § 50.57(c). The Licensing Board assigned the adjudication of Seabrook's licensing issues to two panels; one of them held hearings on the offsite emergency planning contentions discussed above, and the second adjudicated all contentions relevant to low power licensing, including all onsite safety and emergency planning issues. See LBP-87-10, 25 N.R.C. 177, 181 (1987). Petitioners seek review of the NRC's action concerning two issues raised in the low power proceedings.

In June 1982, petitioner NECNP submitted a contention suggesting that Seabrook's ocean-water cooling system could fail because of the "accumulation of mollusks, other aquatic organisms, and debris." JA, No. 89-1306, at 1. As its basis for the contention, NECNP pointed to an NRC notice in the Federal Register discussing the problem of cooling system blockage from sea animals like clams and mussels. Id. at 2-3; see 47 Fed.Reg. 21,653 (1982). The Licensing Board refused to admit the contention. Several years later, however, the Appeal Board reversed and remanded the contention. ALAB-875, 26 N.R.C. 251, 261-63 (1987).

During the course of subsequent proceedings, NECNP sought to compel discovery of Seabrook's ability to

detect and control "microbiologically induced corrosion" in its cooling system. The Licensing Board denied NECNP's motion to compel, ruling that NECNP's cooling system contention was limited to the accumulation of marine organisms and debris and did not encompass the side-effects of microbiological activity. JA, No. 89-1306, at 472-79. NECNP sought reconsideration, submitting an expert affidavit expressing the view that microbiologically induced corrosion was within the scope of the 1982 contention. Id. at 90. The Licensing Board denied the motion to reconsider on the ground that expert opinions were not relevant to the question. Id. at 491-96. NECNP thereafter informed the Board that it no longer wished to

litigate the issue of blockage by "macro"-organisms, id. at 158-59, and the contention was subsequently dismissed as abandoned, id. at 499-501.

The Appeal Board accepted an untimely appeal of the Licensing Board's ruling on the scope of the cooling system contention, ALAB-894, 27 N.R.C. 632 (1988), and later affirmed the ruling, ALAB-899, 28 N.R.C. 93 (1988). Based on the terms and the stated basis of contention, the Appeal Board concluded that the contention addressed "blockage" of coolant flow to safety-related systems, not "leakage" caused by corrosion. 28 N.R.C. at 96-99. The Appeal Board observed that instead of raising this new issue within the terms of the old contention, NECNP should have proffered a late-filed contention. Id.

at 99. The Commission denied review, and the Appeal Board's decision became final agency action.

The second low power issue raised by petitioners relates to the June 1988 full participation exercise of Seabrook's emergency plans. The NRC inspection team overseeing the onsite portion of the exercise issued a report on July 6, 1988, which concluded that "[n]o violations were identified" during the drill and that the "response actions were adequate to provide protective measures for the health and safety of the public." JA, No. 89-1306, at 220. The report detailed various strengths observed in the exercise and also discussed some "weaknesses," including certain actions of onsite plant personnel. Id. at 223-24. In the

opinion of the inspection team, five weaknesses indicated that the plant's Technical Support Center ("TSC") and Emergency Operations Faciltiy ("EOF") staffs displayed questionable engineering judgment or failed to recognized or address technical concerns:

> Neither the EOF [n]or TSC staff questioned a release of greater than 7000 curies per second with only clad damage and no core recovery;
> Efforts continued to restore the Emergency Feedwater Pump after a large break LOCA [Loss of Coolant Accident];
> A questionable fix for the Containment Building Spray system;
> A lack of effort to locate and isolate the release path; and
> No effort was noted to blowdown Steam Generators to lessen the heat load in the containment.

Id. at 224.

On September 16, 1988, petitioners filed a motion requesting that the Board

admit a new contention, or in the alternative reopen the record, based on their allegation that the June exercise had revealed fundamental deficencies in the onsite emergency plan. Id. at 241. On September 28, the NRC staff issued a follow-up inspection report based on further investigation, which concluded that the actions of the plant personnel had been acceptable after all and that the matter of the weaknesses was "considered closed." Id. at 274, 286-88.

The Licensing Board denied petitioners' motion on the grounds that petitioners had failed to satisfy the requirements for a late-filed contention, set forth in 10 C.F.R. § 2.714(a)(1), and that the motion did not meet the criteria for reopening a closed hearing record, id. § 2.734. LBP-89-4,

29 N.R.C. 62, 68-86 (1989). The Appeal Board affirmed, first, on the ground that the Licensing Board did not abuse its discretion in determining that the motion failed to meet the late-filed contention requirements; and, second, on the "independent basis" that even if the motion met those criteria, the proposed exercise contention must be rejected under Commission case law because it did not involve a "fundamental flaw" in the emergency plan. ALAB-918, 29 N.R.C. 473, 480-86 (1989). The Appeal Board did not reach the issue of whether the motion satisfied the criteria for reopening a closed record. Id. at 485. The Commission declined further review; thus the Appeal Board's ruling became final agency action.

After various delays, the Commission ultimately granted a low power testing license for Seabrook in December 1988, with two conditions: The applicants had

to provide reasonable assurance that sufficient funds would be available to cover the costs of decommissioning the plant should a full power license be denied, and petitioners' then-pending motion to litigate the onsite exercise contention had to be resolved. See CLI-88-10, 28 N.R.C. 573 (1988). With the fulfillment of these conditions, the Commission lifted its stay of the license in May 1989. CLI-89-8 29 N.R.C. 399 (1989). After this court refused to petitioners' subsequent request for a stay, Seabrook began low power operations.

II. DISCUSSION

A. Jurisdiction

[1,2] At the outset, we must sort out the reviewability of the various agency decisions implicated in these

petitions. This court has jurisdiction over all final orders of the NRC that are made reviewable by section 189 of the AEA. 28 U.S.C. § 2342. Section 189 provides for judicial review of "[a]ny final order entered in any proceeding," inter alia, "for the granting, suspending, revoking, or amending of any license." 42 U.S.C. § 2239(a)(b). Generally, under these statutes, an NRC order is final if it disposes of all issues as to all parties in the licensing proceeding, that is, if it consummates the agency's decision-making process and results in granting, denying, suspending, revoking, or amending a license. See NRDC, Inc. v. NRC, 680 F.2d 810, 815 (D.C.Cir. 1982). According to this strict rule of finality, we plainly have jurisdiction to review the low power issues raised in

No. 89-1306 because the Commission has issued a final order, CLI-88-10, granting the low power testing license. The full power petitions, however, are another matter.

[3,4] In our opinion, the Commission's immediate effectiveness ruling, CLI-90-3, represents a final agency order that is reviewable by this court. As shown by our decision in Oystershell Alliance v. NRC, 800 F.2d 1201 (D.C.Cir.1986), we will review an immediate effectiveness decison even though, under the procedures set forth in 10 C.F.R. § 2.764, the Commission's decision is not a final adjudication on the merits and is without prejudice to any pending administrative appeal or subsequent adjudication. See 800 F.2d at 1206-07.

Such review is appropriate because it will not disrupt the orderly process of adjudication within the agency and because significant legal consequences flow from the Commission's action. See Port of Boston Marine Terminal Ass'n v. Rederiaktiebolaget Transatlantic, 400 U.S. 62, 71, 91 S.Ct. 203, 209, 27 L.Ed.2d 203 (1970). We also believe it appropriate in this case to review that portion of CLI-90-3 in which the Commission refused to vacate the Licensing Board's authorization of the full power license, 31 N.R.C. at 225-31, because that ruling was a necessary predicate to immediate effectiveness.

[5] Of course, our examination of CLI-90-3 is exceedingly limited. In an immediate effectiveness review, the Commission determines whether it is in

the public interest to lift the administrative stay that automatically attaches to an initial authorization of a full power license. This determination is based on a weighing of equitable considerations: "gravity of the substantive issue, the likelihood that it has been resolved incorrectly below, the degree to which correct resolution by the issue would be prejudiced by operation pending review, and other relevant public interest factors." 10 C.F.R. § 2.764(f)(2)(i). Thus, our review of CLI-90-3 is akin to the review of a district court's grant of a preliminary injunction, see, e.g., National Wildlife Fed'n v. Burford, 835 F.2d 305, 319 (D.C.Cir.1987), and is properly confined to determining whether the Commission abused its discretion,

see Oystershell Alliance, 800 F.2d at 1206.

[6] We reject petioners' argument that immediate effectiveness renders the Licensing Board's decisions and all related "intermediate, procedural or preliminary non-final actions or rulings" of the NRC reviewable by this court under 5 U.S.C. § 704. Petitioner's Motion Seeking Clarifaction of Appellate Jurisdiction, filed Apr. 30, 1990, at 10. We already decided in a related petition that LBP-89-32 is not reviewable even after CLI-90-3. Order, Massachusetts v. NRC, No. 89-1743 (D.C. Cir. filed Mar. 7, 1990) (per curiam). Furthermore, while section 704 authorizes judicial review of preliminary or intermediate rulings "on the review of the final agency action,"

5 U.S.C. § 704, it does not give us plenary jurisdiction over the entire Seabrook licensing litigation. The only "final agency action" at issue here is an order allowing the plant to operate at full power pending the Commission's further review of the licensing issues. This order is not a "final decision" by the Commission pursuant to 10 C.F.R. § 2.770. Section 704 authorizes us to review only those preliminary, intermediate, or procedural rulings that relate to the final agency action presently before the court. Accordingly, we will consider the NRC's full power rulings only to the extent necessary to review the Commission's exercise of discretion in allowing immediate effectiveness.

[7] In particular, the Commission's denial of a financial qualification waiver, CLI-89-20 is interlocutory in nature and is not independently reviewable. We so held in dismissing an earlier petition for review of CLI-89-20, Order, Massachusetts v. NRC, No. 89-1648 (D.C.Cir. filed Dec. 26, 1989) (per curiam), and we see nothing in the immediate effectiveness decision to alter than conclusion. Therefore, we again decline to review CLI-80-20.

[8] Intervenor PSNH maintains that the Commission's evidentiary ruling on the Sholly/Beyea testimony in CLI-90-2 is also not a final licensing order subject to our review. Brief for PSNH at 22-23; see NRDC, Inc. v. NRC, 680 F.2d at 816 (ordinarily, agency's evidentiary ruling is not a final order).

In our opinion, however, the peculiar relationship between CLI-90-2 and the commission's immediate effectiveness decision of the same date, CLI-90-3, makes the decision to exlude the testimony properly reviewable. In allowing immediate effectiveness, the Commission observed that CLI-90-2 "forms an important part of conclusions regarding emergency planning for Seabrook." CLI-90-3, 31 N.R.C. at 225. Indeed, the Licensing Board believed that its initial ruling on the relevance of the Sholly/Beyea testimony "would have the potential to affect the basic structure of the case in a pervasive way,: JA at 144, and in certifying the question of the Commission, the Appeal Board stated that "this issue is cardinal to the resolution of a number

of matters in this proceeding." ALAB-922, 30 N.R.C. at 249. In sum, there is little doubt that if its decision on the relevance of the testimony had gone in petitioners' favor, the Commission would not have allowed the immediate effectiveness of the full power authorization. This close link between the two decisions renders our review of CLI-90-2 appropriate.

B. Interpretation of Emergency Planning Regulation.

In the NRC's view, an emergency response plan provides "reasonable assurance" of "adequate protective measures" under 10 C.F.R. § 50.47(a)(1) if it adequately satisfies the sixteen paragraph(b) criteria in a way that is implementable; the plan need not achieve any minimum radiation dose savings or

minimum evacuation time in the event of a specific accident. See CLI-90-2, 31 N.R.C. at 208, 216-17. This approach is thought most likely to produce a flexible plan that offers the best feasible means for minimizing harm to the public from unpredictable accidents, given the particular characteristics of the plant site and the surrounding EPZ. See id. at 215-17. If any interested party believes that satisfaction of the sixteen standards alone will not produce an adequate and implementable plan in a particular case, the party may petition the NRC uner 10 C.F.R. § 2.758 for a waiver of section 50.47 to allow the imposition of more stringent planning requirements. See id. at 217. Petitioners challenge this interpretation of the emergency planning

regulation and the Commission's consequent decision to exclude Sholly/Beyea testimony.

Petitioners' view of emergency planning fundamentally differs from the NRC's. It is their position that section 50.47(a)(1) requires the Commission to judge an emergency plan in terms of the actual dose of radiation received by a particular EPZ population in a hypothetical accident scenario. The inference to be drawn from their position is that a nuclear power plant may not be licensed for full power operation where the demography and physical constraints of the planning area are such that no feasible response plan can provide substantial protection under particular conditions. See Brief for Petitioners at 13, 43-46; Brief for

SAPL at 2-8. Because of the absence of sufficient protective sheltering near the beaches and the length of time potentially required for a complete evacuation of the beach population during periods of peak use, they contend that Seabrook is such a plant. See Oral Argument of Robert A. Backus, counsel for petitioner SAPL, Sept. 18, 1990:

> QUESTION: Would you agree that adequate sheltering is simply not available on the beaches for the beach population?
>
> MR. BACKUS: Essentially, we agree with that, Your Honor.
>
> QUESTION: Then is it your position that if there cannot be protection, a license may not issue?
>
> MR. BACKUS: That is our position.
>
> QUESTION: That this is a

characteristic inherent in the choice of the site?

MR. BACKUS: That's correct, Your Honor.

This basic, irreconcilable conflict fuels petitioner's challenge to the full power licensing of Seabrook. For that reason, we will address CLI-90-2 before turning to the immediate effectiveness ruling. As discussed below, we decline to disturb the Commission's application of section 50.47.

Our standard of review on this question is necessarily deferential. We will not overturn the Commission's interpretation of its own emergency planning rule "unless that interpretation is plainly inconsistent with the language of the regulation[]." San Luis Obispo Mothers for Peace v.

NRC, 789 F.2d 26, 30 (D.C.Cir.) (en banc) ("Mothers for Peace II"), cert. denied, 479 U.S. 923, 107 S.Ct. 330, 93 L.Ed.2d 302 (1986). If its reading of section 50.47 satisfies that standard, the Commission's application of the regulation to exclude petitioners' expert testimony may be set aside only if it was arbitrary, capricious, an abuse of discretion, or otherwise contrary to law. See 5 U.S.C. § 706(2)(A) (1988). Moreover, the Commission's licensing decisions are generally entitled to the highest judicial deference because of the unusually broad authority that Congress delegated to the agency under the Atomic Energy Act. Carstens v. NRC, 742 F.2d 1546, 1551 (D.C.Cir. 1984), cert. denied, 471 U.S. 1136, 105 S.Ct. 2675,

86 L.Ed.2d 694 (1985).

Petitioners argue that we should not defer to the Commission's interpretation of section 50.47 or the decision to exclude the Sholly/Beyea testimony on the ground that the NRC lacks expertise in the area of emergency planning. They contend that Congress recognized this supposed lack of expertise when it required the NRC to develop and implement mandatory offsite planning standards in consultation with an agency more specialized in emergency response, FEMA, see 1980 NRC Authorization Act, Pub.L. No. 96-295, § 109, 94 Stat. 780, 783-85 (1980), thereby indicating dissatisfaction with the failure of the "checklist" approach to offisite planning that the NRC employed prior to the Three Mile Island ("TMI") accident

in 1979.

Petitioners have confused the judicial deference that is given when the NRC makes "predictions, within its area of special expertise, at the frontiers of science," Baltimore Gas & Elec. Co. v. NRDC, 462 U.S. 87, 103, 103 S.Ct. 2246, 2255, 76 L.Ed.2d 437 (1983), with the deference presumptively owed an agency's interpretation of its own regulations and with the heightened deference for NRC licensing decisions that flows from its broad statutory mandate. The latter two bases for judicial deference fully apply here.

In particular, the 1980 Authorization Act, an expired fiscal appropriations of law, was not in effect when CLI-90-2 was decided and therefore did not limit the licensing discretion

otherwise conferred on the Commission by Congress. Moreover, petitioners' argument that the NRC lacks expertise in offsite emergency planning was expressly rejected in Massachusetts v. United States, 856 F.2d 378 (1st Cir. 1988), where the court held that "[t]he substantive area in which an agency is deemed to be expert is determined by statute; here, under the relevant congressional enactments . . . , the NRC is specifically authorized and directed to determine whether emergency plans adequately protect the public." Id. at 382. We agree with the First Circuit. Accordingly, we see no reason to depart from the highly deferential standard of review outlined above.

Our analysis must begin with the wording of section 50.47.

Petitioners argue that the Commission's interpretation violates the plain language of the regulation because protective measures cannot possibly be judged "adequate," as required by section 50.47(a)(1), without consideration of their actual effectiveness in protecting the public. That conclusion, however, is not compelled by a straightforward reading of the rule.

The Commission observed that "[n]othing in the regulation contains any suggestion that calculations of dose consequences are intended to play a role in the evaluation of a plan's adequacy." CLI-90-2, 31 N.R.C. at 214. We cannot say that this judgment is flatly contradicted by the language or structure of section 50.47. As we have

previously noted in determining that a response plan need not consider a particular emergency event like an earthquake, section 50.47 "make[s] no reference to specific conditions or accident sequences." Mothers for Peace II, 789 F.2d at 43. Paragraph (a) appears to state the general goal of the regulatory scheme for emergency planning. As we earlier observed, paragraph (a) "does not address any particular emergency . . .; rather, it sets forth a general standard that envisions judgment and implies discretion." Id. at 31. Paragraph (b) then enumerates specific standards that a response plan "must meet," presumably for the purpose of achieving the goals of adequacy and implementability. 10 C.F.R. § 50.47(b). None of these

specific standards requires the Commission to measure a plan against particular hypothetical scenarios.

Other provisions in the regulation indicate that the core of the Commission's inquiry is compliance with the generic standards of paragraph (b). Paragraph (a)(2) provides that FEMA's determination supporting the "reasonable assurance" finding "will primarily be based on a review of the plans," 10 C.F.R. § 50.47(a)(2), which will necessarily focus on the contents required by paragraph (b) and Part 50, Appendix E.IV. Paragraph (c)(1) provides, inter alia, that "[f]ailure to meet the applicable standards set forth in paragraph (b) of this section may result in the Commission['s] declining to issue an operating license," unless

the applicant for the license can demonstrate to the Commission's satisfaction that deficiencies in the plan are not significant for the plant in question, that interim measures will compensate for the deficiencies, or that there are other compelling reasons to permit licensing. Id. § 50.47(c)(1).

In the event the applicant must develop its own response plan as a result of a refusal by state and local governments to participate in emergency planning, the regulation provides that the "utility plan will be evaluated against the same planning standards applicable to a state or local plan, as listed in paragraph (b) of this section," with certain allowances for the lack of governmental participation. Id. § 50.47(c)(1)(iii). Under paragraph

(d), the NRC's evaulation of onsite emergency planning for purposes of low power licensing requires a similar finidng of reasonable assurance of adequate protective measures, which will be based on the NRC's "assessment of the applicant's onsite emergency plans against the pertinent standards in paragraph (b) of this section and Appendix E." Id. § 50.47(d).'

All of these provisions bolster the Commission's conclusion that "adequacy is to be judged by conformity with the planning standards." CLI-90-2, 31 N.R.C. at 214. These sixteen standards were derived from assessments of a spectrum of possible radiological accidents, and the NRC has concluded that they provide an appropriate basis for arriving at a plan that will be

comprehensive and flexible. See id. at 215-17. Petitioners' construction of paragraph (a) is certainly plausible, perhaps even desirable as a matter of policy, but it not the only reasonable reading of the regulation. We conclude that the Commission's interpretation is not plainly inconsistent with any language in section 50.47.

Petitioners further argue that the agency interpretation is contrary to the mandate of the 1980 Authorization Act, in which Congress directed the NRC to establish and enforce standards for offsite emergency plans. See Pub.L. No. 96-295, § 109, 94 Stat. at 783-84.[+/]

[+/] Section 109 of the NRC Authorization Act is reprinted in the Appendix following this opinion.

They point to language in the Authorization Act indicating that a response plan was to "provide[] reasonable assurance that public health and safety is not endangered," id. § 109(b)(1)(B)(i)(II); that the NRC was required to "assess the adequacy" of existing plans, id. § 109(b)(3); and that the agency was directed to report to Congress on the emergency response capabilities available for plants with existing construction permits (which included Seabrook) and to determine "the maximum zone in the vicinity of each such facility for which evacuation of individuals is feasible at various different times corresponding to the representative warning times for various different types of accidents," id. § 109(c). Petitioners contend that these

provisions required the NRC to judge the effectiveness of a particular plan's protective measures based on "the degree to which the public is actually protected by those measures. Brief for Petitioners at 27.

We do not agree that the Authorization Act required the NRC to develop standards for evaluating each emergency plan in terms of an actual reduction in potential radiation exposure. The Act directed the agency to promulgate planning standards by rule and to require as a condition of licensing that for each plant there exist either a plan that complies with the NRC's regulatory's standards for responding to a radiological emergency, or in the alternnative, a plan that offers reasonable assurance that public

health and safety will not be endangered. Pub.L. No. 96-295, § 109(b)(1). This congressional mandate left to the NRC's discretion the specific requirements of emergency planning. The alternative structure of section 109(b) reflects Congress's assumption that the NRC could develop generic standards that would reasonably assure the public safety without having to examine the specific safety consequences of each emergency plan for each plant.

Petitioners do not contend that the agency failed to comply with section 109(c) of the Act, which simply required the NRC to report to Congress on the emergency response capabilities of each plant then under construction and to include in that report a description of

the maximum feasible emergency planning zone for such plant. See id. § 109(c). The fact that Congress directed the NRC to identify enlarged EPZ's for all new facilities with reference to feasible evacuation times does not signify that a response plan could only be approved if it would achieve some minimum safe evacuation time for persons in the EPZ. This provision did not constrain the NRC's discretion to define generic standards for such protective measures. See H.R.Rep. No. 1070, 96th Cong., 2d Sess. 27 (1980) (conference report) (while designation of EPZ should consider capability to implement protective measures such as evacuation and sheltering quickly and safely, minimum requirements for planning standards left to NRC discretion.)

[13] Petitioners offer a second statutory basis for their contention that the adequacy of emergency planning must be measured by the actual mitigation of harmful consequences. As a result of the TMI accident, they argue, the NRC came to realize that emergency planning is an essential "first tier" safety requirement, along with siting and design engineering, for achieving "adequate protection to the health and safety of the public," the goal of licensing under section 182(a) of the AEA, 42 U.S.C. § 2232(a). See 44 Fed. Reg. 75,167, 75,169 (1979) (rationale for promulgation of section 50.47). They conclude from this that the 1980 Authorization Act required that the same standards be applied in determining the adequacy of offsite

emergency planning as are applied in determining the adequacy of site selection and plant design.

From this premise, petitioners reason that each emergency response plan must be judged to provide effective protection for the public from hypotehtical accidents that surpass the containment capabilities of engineered safety features and onsite precautions. The only possible measure of such effectiveness they claim is dose consequences.

Petitioners contend that in its 1980 rulemaking proceedings on emergency planning, the NRC embraced this concept and, in response to the Authorization Act, rejected the pre-TMI practice of relying on a checklist to guide state and local authorities in the development of emergency plans because that approach

was insufficient to achieve "adequate protection." Petitioners argue that the Commission's current intrepretation of section 50.47 represents a throwback to the pre-Authorization Act practice because the paragraph (b) catalog of standards is almost identical to the earlier checklist used by the NRC. Cf. NRC, Guide and Checklist for the Development and Evaluation of State and Local Government Radiological Emergency Response Plans in Support of Fixed Nuclear Facilities, NUREG-75/111 (1974).

In CLI-90-2, the Commission agreed that emergency planning under section 50.47 is a "first-tier" safety requirement designed to implement the "adequate protection" standard of section 182(a) of the AEA. 31 N.R.C. at 210-13. But the Commission did not

believe this fact was material to whether evidence like the Sholly/Beyea testimony is properly considered in the review of an emergency plan. Id. at 210. According to the Commission, even though offsite planning is an essential element of adequate public protection, it is not necessarily of equal safety significance with other protective requirements:

> [A]dequate emergency planning is "essential," just as adequate lifeboats are essential for a liner carrying passengers at sea. But it's only common sense to acknowledge that emergency plans, like lifeboats, are a backstop, a second or third line of defense that comes into play only in the extremely rare circumstance that engineered design features and human capacity to take corrective action have both failed to avert a serious mishap.

Id. at 213.

For initial siting approval, the NRC requires the applicant to establish

around the proposed plant an "exclusion area" and "low population zone" ("LPZ"), the sizes of which must be determined on the basis of specific maximum safe radiation exposure levels for the public assuming a fission product release from the reactor core. See 10 C.F.R. § 100.11(a)(1)(2). The siting regulations also require the determination of a "population center distance," measuring the distance to the nearest area of dense population, which must be at least one and one-third times the radius of the LPZ. See id. § 100.11(a)(3). Thus, the shorter the population distance, the greater the design-engineered safeguards required in order to have an LPZ with an outer boundary of no more than three-fourths the distance to the nearest population center. In emergency

planning, by contrast, the goal of mitigating dose consequences in the larger EPZs is to be attained through the application of generalized planning standards without consideration of actual levels of dose savings. See Shoreham, 24 N.R.C. at 30.

Our limited task on this point is to determine whether, given its recognition that emergency planning is "first-tier," the NRC's generalized approach to dose mitigation in offsite planning is a reasonable exercise of the agency's discretion under section 182(a). We believe it is. Section 182(a) does not expressly require that "adequate protection" be judged by a single standard for different categories of safety features. In fact, we have repeatedly emphasized the broad

discretion available to the agency in devising appropriate standards and have held that "adequate protection" permits the acceptance of some level of risk. See Union of Concerned Scientists v. NRC, 824 F.2d 108, 117-18 (D.C.Cir. 1987). It is for the NRC to determine whether a level of, or approach to, risk reduction is acceptable for offsite planning that may not be adequate for plant siting and design engineering.

Contrary to petitioner's contention, the Commission's July 23, 1980, rulemaking proceedings do not clearly establish that section 50.47 was intended to achieve a measurable level of effective protection in specific cases. In choosing the word "adequate" over "appropriate" for paragraph (a), certain members of the Commission voiced

the opinion that "adequacy" would connote reasonabe assurance of effective dose reductions, whereas "appropriate" might be satisfied by a less demanding best-efforts standard that could leave the public in danger. See Transcript of NRC Rulemaking Session, July 23, 1980, at 22-28, 34-43, reprinted in JA at 25-31, 37-46. Petitioners argue that these statements contemplate a case-by-case effectiveness assessment.

We are not convinced. At most, the 1980 rulemaking proceedings establish that the overall goal of emergency planning is reasonable and feasible dose reductions under the circumstances, a proposition reiterated in the Commission's ruling, see CLI-90-2, 31 N.R.C. at 216-17. In the same hearing cited by the petitioners, one

commissioner stated:

> [T]he whole thrust of the rule as I perceive it is what we do things with plant design and operation to try to keep things from happening. Then you can say if something does happen it seems sensible . . . to have pre-existing plans and notification means so that we can take whatever measures are practicle . . . to reduce the radiological hazard.

JA at 38. Another commissioner noted that a plan need not

> be found inadequate just because you know that there are going to be some periods of time when you can't do that which you would really like to be able to do . . . because of the conditions of the accident or the conditions of the weather.

Id. at 41-42. While the adequacy of a plan is necessarily determined on a case-by-case basis, the rulemaking record does not contradict the Commission's decision that the minimization of harm to the public in each case may be inferred from satisfaction of the sixteen planning

standards, regardless of whether the plan will actually protect the entire EPZ under all conditions if one of the particular accidents assessed in the underlying guidelines should occur.

Nor do we accept the claim that under the Commission's interpretation, section 50.47 amounts to little more than a pre-TMI reliance on a pro forma "checklist." Before 1980, the Commission did not require an NRC-approved offsite emergency plan as a condition of licensing. The checklist provided state and local governments with criteria for the development of plans for responding to radiological emergencies and facilitated their coordination with those of the licensee. See NRC, Emergency Planning for Nuclear Power Plants, Regulatory Guide 1.101 (rev.

Mar. 1977). The regulatory scheme for emergency planning deveoped by the NRC in response to TMI and the 1980 Authorization Act is markedly more demanding than the prior practice, even though the parargraph (b) planning standards are largely drawn from the earlier criteria. See generally 45 Fed.Reg. 55-401, 55-402-08 (1980).

After 1980, satisfaction of these standards became for the first time a condition of licensing that required the finding of adequacy by FEMA and the NRC. Id. at 55,403. The new scheme provided that where significant deficiencies in a plan would preclude the finding of adequacy, the plant could be shut down if the deficiencies were not corrected within four months. Id. The geographical area for offsite planning

was substantially expanded from the LPZ to two larger zones, the ten-mile radius plume exposure pathway EPZ and the fifty-mile radius ingestion pathway EPZ. See id. at 55,406; 44 Fed. Reg. 61,123 (1979); see also Seacoast Anti-Pollution League v. NRC, 690 F.2d 1025, 1028-29 & nn.10 & 12 (D.C.Cir. 1982) Also, the new scheme required detailed implementing procedures and more stringent public notification capabilities. See 45 Fed. Reg. at 55,403, 55,407. Finally, emergency plans must comply with the detailed requirements of Appendix E. These enhanced safety requirements plainly represent something more than a checklist review.

Furthermore, we do not take it from the Commission's ruling in CLI-90-2 that

paragraph (a) has no meaning independent of paragraph (b). As we understand the NRC's application of the regulation, paragraph (a) requires the agency to determine that compliance with the sixteen planning standards is more than pro forma. The NRC must assure itself, based on FEMA's review, that the plan addresses each of the individual requirements in a mannner that is adequate and implementable. There is ample indication in the administrative record that the Licensing Board employed this approach in its approval of the NH Plan for Seabrook.

For example, the planning standard in section 50.47(b)(10) is satisfied if the response plan demonstrates that "[a] range of protective actions [has] been developed . . . for emergency workers

and the public." 10 C.F.R. § 50.47(b)(10). Petitioners argued before the Licensing Board that the NH Plan did not satisfy (b)(10) because it did not contain adequate provisions for sheltering the beach population. See CLI-90-3, 31 N.R.C. at 244. Commission guidance makes clear, however, that (b)(10) does not require sheltering as an option but does require an evaluation of the expected advantages of sheltering under local circumstances. Id. (citing NUREG-0654, Criterion 11.J.10m). Pursuant to this guidance, the Licensing Board set out to determine "whether the State of New Hampshire has given careful and adequate consideration to sheltering as a protective action" in the NH Plan. LBP-88-32, 28 N.R.C. at 771; see CLI-90-3, 31 N.R.C. at 244.

The Board found that the State had satisfied this standard. In response to comments from FEMA, the State had provided detailed explanations of its approach to the use of sheltering for the beach population. 28 N.R.C. at 758. Under almost all circumstances, early beach closure or evacuation would be preferred action for the beach areas because of the lack of beachside structures that would offer substantial protection. Id. at 758, 766. The plan included a description of the very low-probability conditions under which emergency planners would choose general sheltering for the beach population. Id. at 758-59, 775.

Sheltering would be more readily utilized for the estimated two percent of beachgoers without their own

transportation, and the plan identified specific shelters for these persons and provided for sufficient bus transportation along the beach routes. Id. at 759, 761. In addition, the Board found that credible surveys established that sheltering providing a dose reduction of at least ten percent existed for the entire peak or near peak transient summer beach crowd in the very limited circumstances in which sheltering would be preferred option. Id. at 770-72, 775. FEMA agreed with the technical bases for the State's approach to sheltering and concluded that the NH Plan, with its primary reliance on evacuation, satisfied the requirement for a range of protective measures. Id. at 767.

Based on these and other findings, the Licensing Board ruled that adequate consideration had been given in the NH plan to the protective action of sheltering Seabrook's beach population. Id. at 776. On review, the Appeal Board's conclusions on the limited nature of the sheltering option but went even further on the question of implementability, requiring that the NH Plan include more detailed implementing instructions for those very low probability situations when general sheltering of the transient beach population would be the preferred option. See ALAB-924, 30 N.R.C. at 362-73.

Far from applying an uncritical checklist methodology, the Licensing and Appeal Boards exhibited a reasoned

evaluation of the adequacy and implementability of the plan's compliance with the paragraph (b) standards. That is the approach we interpret the Commission to require under section 50.47. See, e.g., CLI-90-3, 31 N.R.C. at 244-48 (discussing reasonableness of Licensing Board's treatment of sheltering option). Indeed, in ruling on the immediate effectiveness of the full power authorization, the Commission agreed with the Appeal Board that the plan should include further implementing detail if general beach sheltering was to be an option. Id. at 248. Although it also agreed with the Licensing Board that the lack of such detail was not significant, id., the Commission's concurrence with the Appeal Board on the

need for further implementing measures reinforces our conclusion that the NRC requires fulfillment of the individual paragraph (b) standards in an adequate and implementable manner.

[14] Having determined that the Commission's interpretation of its emergency planning regulation is consistent with the language of the regulation and is not otherwise contrary to law, we have little difficulty concluding that the Commission's exclusion of the Sholly/Beyea testimony was not improper.

Given the fact that the Licensing Board's task under section 50.47 is limited to a review of the plan's conformity with the paragraph (b) standards and that this review does not entail consideration of the dose

consequences that might result from various hypothetical accidents, the Commission had a reasonable basis for concluding that the proffered evidence was not relevant to the proceedings because it would not make the finding of an adequate and implementable plan within the meaning of the regulation more or less likely. Cf.Fed.Re.Evid. 401. To allow litigation of specific dose consequences would be inconsistent with a methodology that was derived from generic guidelines and was designed to eliminate the need for an examination of hypothetical dose savings. See CLI-90-2, 31 N.R.C. at 215-17. This determination is within the NRC's "great discretion to decide what matters are relevant to its licensing decision." Union of Concerned Scientists v. NRC,

735 F.2d 1437, 1446 (D.C. Cir. 1984) ("UCS I"), cert denied, 469 U.S. 1132, 105 S.Ct. 815, 83 L.Ed.2d 808 (1985).

At bottom, petitioners' contention is that the Sholly/Beyea testimony is probative of their belief that the effective emergency planning at Seabrook is inherently impossible because the plant is located so near the crowded ocean beaches, a fact that was described by SAPL counsel at oral argument as an "operating license blocker." They point to post-TMI rules that require applicants for nuclear facility construction permits to file preliminary emergency plans, see 10 C.F.R. §50.34(a)(10), Appendix E.II ("Preliminary Safety Analysis Report"), and they suggest that this requirement means that after 1980 the feasibility of

emergency planning was meant to influence site selection. The implication apparently is that inherent planning difficulties created by the siting of a facility may block section 50.47 approval where the plant received its construction permit, as did Seabrook, prior to TMI.

The problem is that, as discussed above, neither the AEA nor section 50.47 as interpreted by the Commission leads to this implication. The Commission has given no indication that preliminary emergency plans under section 50.34(a)(10) will be used as "site blockers" any more than final emergency plans under section 50.47.

Finally, we note that although the Commission held the Sholly/Beyea testimony inadmissible for purposes of

the section 50.47 proceeding, the Commission did suggest a possible use for such evidence. See CLI-90-2, 31 N.R.C. at 217. It noted that when the Licensing Board refused to admit the evidence, petitioners could have filed a petition for a waiver of or exception to the normal application of section 50.47, requesting more stringent planning requirements for Seabrook on the ground that "special circumstances with respect to the subject matter of the particular proceeding are such that application of the rule or regulation . . . would not serve the purposes for which the rule or regulation was adopted." 10 C.F.R. §2.758(b). With their application for a waiver, petitioners could then have submitted the Sholly/Beyea testimony to the Licensing Board in the form of

supporting affidavits "set[ting] forth with particularity the special circumstances alleged to justify the waiver or exception." Id. Petitioners failed to avail themselves of this opportunity.

C. Immediate Effectiveness Review

Petitioners argue that the Appeal Board's ruling in ALAB-924 mandated that the Licensing Board hold further hearings on beach sheltering and on the other remanded issues prior to authorizing a full power license for Seabrook, and that, therefore, the Commission acted unlawfully in refusing to vacate authorization of the license and in allowing the Licensing Board's decisions to become immediately effective. They also contend that the Commission's action in CLI-90-3 violated

their statutory right to a hearing under section 189(a).

[15] The NRC's rules of practice do not specifically provide for the "mandatory relief" petitioners were seeking in their motion to vacate. See CLI-90-3, 31 N.R.C. at 229. As a practical matter, no order was necessary because an initial decision authorizing a full power license is automatically stayed pending the immediate effectiveness review. See 10 C.F.R. §2.764(f)(3)(iii). Nevertheless, the Commission chose to entertain petitioners' motion, and, borrowing from the law of judicial mandamus, decided that such extraordinary relief would only be appropriate if the Licensing Board had breached "a clear, nondiscretionary duty to withold . . .

authorization." CLI-90-3, 31 N.R.C. at 229-30 (citing Ganem v. Heckler, 746 F.2d 844, 852 (D.C.Cir. 1984)). The decision to adopt this approach was peculiarly within the Commission's discretion.

[16] We cannot say that the Commission acted arbitrarily or capriciously in concluding that the Licensing Board had not violated such a duty. As the Commission observed, no NRC rules preclude the authorization of a license while remand proceedings are pending, and there is precedent for such authorizations. CLI-90-3, 31 N.R.C at 230; see, e.g., Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), LBP-84-53, 20 N.R.C 1531, 1542-48 (1984). Indeed, 10 C.F.R. §50.47(c)(1) expressly contemplates that deficiencies

in an emergency plan that are "not significant for the plant in question" may be resolved by the Licensing Board after license issuance. 31 N.R.C. at 230.

The Appeal Board did not state that the deficiencies it identified in the LBP-88-32 partial initial decision precluded authorization. It expressly affirmed the Licensing Board's decision in all respects other than the four specific items and said only that these items required "appropriate corrective action." ALAB-924, 30 N.R.C. at 373. ALAB-924 did make it clear that so long the NH Plan was to include sheltering as a possible protective option for the general transient beach population, implementing details would have to be included in it, id. at 368, 372 n. 194;

but the Appeal Board's directives did not rule out a finding by the Licensing Board that the planning deficiencies were not significant under section 50.47(c). In fact, the Appeal Board deferred any action on petitioners' motion to vacate in order to give the Licensing Board an opportunity to provide "some explanation of the relevance of 10 C.F.R. §50.47(c)(1)." JA at 1049. And, as the Licensing Board pointed out in its supplemental opinion, LBP-89-33, 30 N.R.C. at 657 & n.2, only one week prior to the issuance of ALAB-924, the Appeal Board had denied a motion by petitioners for an order directing the Licensing Board to withhold its impending decision in LBP-89-32, even though the Commission had made it known that LBP-89-32 "would

have the potential to authorize issuance of the full-power license," CLI-89-19, 30 N.R.C. 171, 173 (1989).

[17] We do not agree that the Commission's application of section 50.47(c) is inconsistent with petitioners' right to a hearing under section 189 of the AEA. Section 189(a) provides that in any licensing proceeding, the Commission shall grant a hearing upon the request of any person whose interest may be affected." 42 U.S.C. §2239(a)(1). We have held that section 189(a) guarantees an opportunity for a hearing on issues that the NRC considers material to licensing. See UCS I, 735 F. 2d at 1443, 1447-48. Section 50.47(c)(1) indicates that the NRC does not consider all issues relating to deficiencies in a particular

response plan to be material to the basic findings required for license authorization under sections 50.47(a)(1) and 50-57(a)(3). Thus, consistent with the AEA, the Licensing Board could choose to address the remanded issues in post-licensing hearings upon finding that the issues were not significant for emergency planning at Seabrook. See CLI-90-3, 31 N.R.C. at 230-31. In addition, it is established NRC practice that, where appropriate, that Licensing Board may refer minor safety matters not pertinent to its basic findings to the NRC staff for post-hearing resolution, and may make predictive findings regarding emergency planning that are subject to post-hearing verification. Id. at 231 n. 11.

Turning to its immediate effectiveness review, the Commission examined the reasonableness of the Licensing Board's supplemental opinion explaining why the four remanded issues were not significant for the adequacy of emergency planning. On the issue of letters of agreement with school personnel, the Commission believed that the Licensing Board's further explanation of its original finding might well satisfy the Appeal Board's concerns; at any rate, there was support for the finding that sufficient school personnel would accompany children in an emergency and no indication that evacuation would be delayed even if the personnel did not participate. Id. at 234-35. The Commission found reasonable the Licensing Board's opinion that the

second remanded issue - the accuracy of the special-needs survey - was a question more of fine-tuning an acceptable methodology than of developing a different methodology, and that any uncertainty about the size of the special-needs population was probably not large enough to require additional transportation resources. Id. at 239-40. The accuracy of the evacuation time estimates for advanced life support patients remained unresolved, in the Commission's opinion, but the error was not large enough to cause authorities to recommend sheltering over evacuation and could easily be corrected, given that such patients were found at only two locations in the EPZ. Id. at 243.

Finally, on the lack of implementing details for beach sheltering, the Commission believed that correcting this deficiency would not be difficult because a comprehensive survey of available beachside shelters had been prepared, and the Appeal Board's mandate simply required that the NH Plan designate which shelters on the survey list would be suitable and available for use. Id. at 248 & n.45. Moreover, the Commission concurred with the Licensing Board that the sheltering issue was not significant. Evacuation would be the primary protective action for the beach and the record showed that the protection afforded by the structures at the beach was "trivial," as further evidenced by the fact that the Utilities Plan, which the Licensing Board had

found adequate, did not include sheltering as an option for the Massachusetts beaches. Id. at 248. In this regard, we note that in later proceedings, New Hampshire revised its plan to omit any provision for sheltering the general beach population other than a "shelter in place" option, and the Licensing Board therefore concluded that this issue was resolved. LBP-90-20, 31 N.R.C. 581, 585 (1990).

It is evident that the Commission did not abuse it discretion in concluding that the Licensing Board's findings on these matters were reasonable. See Oystershell Alliance, 800 F.2d at 1206. Hence, we also deny the petitions for review as to this full power issue.

D. Low Power Licensing Issues (No. 89-1306)

[18] We need not devote much analysis to petitioners' arguments concerning the Appeal Board's interpretation of the cooling system contention in the low power proceedings. See background discussion at pages 13-14 above. On this issue, petitioners direct most of their effort toward relitigating the question of whether microbiologically induced corrosion is within the four corners of NECNP's 1982 contention. This court, however, is limited to deciding whether the Appeal Board's ruling in ALAB-899 was arbitrary or capricious, or otherwise contrary to law. See 5 U.S.C §706(2)(A). Petitioners have not shown that it was.

They argue only that the Appeal Board acted arbitrarily by ignoring certain terms in the contention that could conceivably be read to encompass the build-up of microscopic aquatic organisms, and that the Board had no reasonable grounds for disregarding the opinion of NECNP's expert concerning the technical interpretation of these terms. We think the Appeal Board's construction was reasonable because it took into account the entire context of the contention, whose heading and stated basis focus solely on the blockage of cooling systems due to the accumulation of marine life and debris. See ALAB-899, 28 N.R.C. at 96-97. One important purpose of the NRC's pleading requirements in 10 C.F.R. §2.714(b)(2) is to put all parties reasonably on

notice about what issues may be raised. 28 N.R.C. at 97. Therefore, it was sensible for the Board to approach the matter as a straightforward question of linguistic construction and not as a matter of technical interpretation requiring a battle of experts. We deny the petition as to this issue.

[19] The second low power issue in No. 89-1306, however, does raise questions that justify granting this petition. Petitioners argue that the NRC violated their statutory right to a hearing by rejecting the contention concerning the onsite weaknesses identified in the 1988 full participation exercise. See background discussion at pages 15-16. Because we are unable to determine whether the Appeal Board properly considered the

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potential materiality of the allegations involved, we must remand this issue for further explanation.

The Appeal Board's ruling in ALAB-918 is the final agency action on the exercise contention and is the only opinion before us. Petitioners challenge the Appeal Board's application, in ALAB-918, of the late-filed contention criteria of 10 C.F.R. §2.714(a)(1) on the ground that use of these criteria cannot be squared with our decisions in UCS I and San Luis Obispo Mothers for Peace v. NRC, 751 F.2d 1287 (D.C. Cir. 1984) ("Mothers for Peace I"), vacated in part, 760 F.2d 1320 (D.C.Cir.1985) (en banc), and aff'd, 789 F.2d 26 (D.C.Cir.) (en banc), cert denied, 479 U.S. 923, 107 S.Ct. 330, 93 L.Ed.2d 302 (1986).

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Under the NRC's rules, intervenors in licensing proceedings must file their proposed contentions at least fifteen days prior to the Licensing Board's prehearing conference. 10 C.F.R. §2.714(b)(1). The Board may grant additional time for the filing of contentions based upon a balancing of the factors set forth in section 2.714(a)(1) governing nontimely petitions for intervention. Id. Those factors are:

(i) Good cause, if any, for failure to file on time.

(ii) The availability of other means whereby the petitioner's interest will be protected.

(iii) The extent to which the petitioner's participation may

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reasonable be expected to assist in developing a sound record.

(iv) The extent to which the petitioner's interest will be represented by existing parties.

(v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

Id. §2.714(a)(1).

Because of the requirement, under section 2.714(b)(1), that contentions be filed prior to the prehearing conference, it would appear that almost any contention based on the results of a plant's full participation exercise would be subject to a balancing of these factors, under NRC rules, the exercise must take place less than two years prior to full power licensing, id. Part 50, Appendix E.IV.F.1, a period that

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generally falls well after the prehearing conference. The full participation exercise for Seabrook, for example, occurred in June 1988, more then six years after the prehearing conference on the low power licensing issues.

[20, 21] Under UCS I, the NRC may not eliminate from the licensing proceedings consideration of evidence that is relevant to material licensing issues, such as issues raised by emergency preparedness exercises. 735 F.2d at 1443-48; see Union of Concerned Scientists v. NRC, 920 F.2d 50, 55 (D.C.Cir.1990) (reading UCS I to require a hearing on all material "issues", as distinct from all "evidence" or "information" that comes to light after the time of the initial application).

At the same time, we fully recognize that the NRC has "wide discretion to structure its licensing hearings in the interests of speed and efficiency." 735 F.2d at 1448. This discretion may include, for example, rules on the admissibility of evidence, enhanced pleading requirements in support of contentions, and procedures for summary disposition of claims not meeting the agency's criteria. See id. In short, we allow for a balancing between the public's right to a hearing under section 189 and the NRC's discretion to structure efficient licensing proceedings. See id. at 1446-49.

We are not willing to say that the sensitive balance outlined in UCS I is upset whenever the NRC applies the late-filed contention factors to

submissions based on deficiencies revealed in exercises occurring after the prehearing cut off. The unfettered ability to file a late contention may significantly undermine the efficiency of a proceeding even if the contention is based on newly discovered information. The NRC should retain discretion to impose enhanced procedural requirements on such filings so long as the use of that discretion is consistent with section 189.

On their face, the five factors listed in section 2.714(a)(1) as justifying intervention are not well suited to the question of whether a late-filed contention should be considered where based on deficiencies found in a subsequent exercise, and we think it odd that the NRC would choose

to apply them in this context. An exercises contention will in practice almost always be filed out of time, so the question of "good cause" seems less central. Two of the other factors also do not make much sense here. (Factor (iv) does not seem relevant because there will almost never be other parties already litigating the issues raised by the new contention. And factor (v) is potentially inconsistent with UCS I's holding that emergency preparedness exercises are material to licensing: it should not be a strike against admitting the contention that it will "broaden the issues" to include material questions about the adequacy of preparedness. Nevertheless, in practice the NRC's boards have attempted to compensate somewhat for the problematic nature of

these factors, and we will look to the manner in which they have been applied in the particular case before us.

[22] We think the Appeal Board's application of factor (i) to petitioners' exercise contention is reasonable and consistent with section 189. In considering "good cause" for a late filing, the adjudicatory boards insist that "a late-filed contention must be tendered promptly upon the discovery of the information upon which it is based." ALAB-918, 29 N.R.C. at 482 (citing Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 N.R.C. 1041, 1048 (1983)). This prompt-filing requirement is in line with the agency's broad discretion to structure efficient proceedings. Moreover, we have been

presented with no argument for rejecting the Board's view that factor (i) is the "most crucial" in the analysis. See 29 N.R.C. at 484.

Applied in this fashion, the first factor is not contrary to Mothers for Peace I which held that under section 189(a), the NRC may not unjustifiably require that a material contention satisfy the heightened evidentiary standards for reopening a closed record. See 751 F.2d at 1316. Mothers for Peace I does not constrain the NRC's discretion to impose reasonable limits on the untimely presentation of claims including claims based on late-breaking developments that are not promptly filed. We do not express an opinion here about whether the NRC may justifiably apply these five factors to

contentions that are tendered promptly upon discovery of newly revealed information. The Appeal Board made it clear that that would be the agency's practice in such cases. See 29 N.R.C. at 480.

In the present case, the Appeal Board did not act arbitrarily in upholding the finding that petitioners lacked good cause for their failure to tender the exercise contention promptly. The Appeal Board agreed with the Licensing Board that petitioners had no convincing justification for waiting until September 16, 1988, to present their contention when all of the essential information on which it was based was available in the July 6 inspection report, which was received by petitioners no later than July 15. Id.

at 482-83. Although this period of approximately two months does not strike us as an exceptional delay, we are not willing to interpose our judgment. The low power proceedings had advanced to a stage when promptness might have been especially important. Indeed, the Licensing Board had renewed its authorization of a low power license when petitioners moved to admit their contention. See id. at 475-76.

The problem with the Appeal Board's reasoning relates to its application of the remaining four factors. The NRC requires a "compelling" showing on these factors to overcome a lack of good cause under (i). Id. at 484. In this counterbalancing, the greatest emphasis seems to be on factor (iii)-the ability of the petitioning party to assist in

developing a sound record. See id. at 483-85. The Appeal Board stated that petitioners "had an obligation in addressing the third criterion to set out with as much particularity as possible the precise issues they plan to cover, the identity of their prospective witnesses, and a summary of their proposed testimony." Id. at 483. Here the Appeal Board upheld the finding that this significant factor weighed against admitting the contention because petitioners, who were "experience litigants," had failed in their motion papers "to furnish the required information in the prescribed form." Id. at 483-84.

[23] Our concern is that in focusing on whether petitioners' papers satisfied these formal "particularity"

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requirements, the Appeal Board may have lost sight of the potential materiality of the issues raised by the contention and thus may have strayed from the line laid down in UCS I. We think section 189 required the Appeal Board to provide an affirmative explanation as to whether petitioners' allegations raised any material issue and, if they did, how that materiality was to be weighed against petitioners delay in promptly filing the contention. We note, for example, that petitioners offered an expert affidavit alleging that the July 6 inspection report showed fundamental deficiencies in Seabrook's onsite emergency preparedness. See Affidavit of Robert D. Pollard, Sept. 16, 1988. Petitioners specifically contended that the deficiencies in the onsite plan

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precluded a finding of compliance with paragraphs (b)(2), (b)(14), and (b)(15) of the section 50.47 planning guidelines. JA, No. 89-1306, at 253-54.

The Appeal Board failed to consider these allegation in analyzing whether, on balance, it was proper to reject petitioner's late-filed claims. The Licensing Board did engage in an extended discussion of the safety significance of the exercise issues in the context of its ruling on petitioners' motion to reopen the record, see LBP-89-4, 29 N.R.C. 62, 74-86 (1989), but the Appeal Board declined to address that portion of the Licensing Board's decision, ALAB-918, 29 N.R.C. at 485. Thus, we cannot impute this reasoning to the higher board.

The Appeal Board provided a second, independent basis for its opinion, namely, that no hearing was required on petitioner's exercise contention because the contention did not involved a "fundamental flaw" in the onsite plan. Id. at 485. Under the NRC precedent, a fundamental flaw is a deficiency that precludes the finding of reasonable assurance under 50.47(a)(1), and is confined to deficiencies that reflect a failure of an essential element of the plan that can be remedied only through a significant revision of the plan. See Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1), ALAB-903, 28 N.R.C. 499, 504-05 (1988) ("LILCO"). We acknowledge this concept in UCS I, and stated that our gloss on section 189 does not restrict the NRC's

authority to adopt this substantive licensing standard. 735 F.2d at 1448. We nevertheless recognized that even the best of plans may be so poorly implemented that it would be foolhardy to license the plant until fundamental deficiencies detected in an exercise, such as serious shortcomings in staff training, were substantially corrected. Cf. 10 C.F.R. § 50.47(b)(15) (requiring plan to provide for adequate training of emergency personnel). Thus we noted that the agency would still be subject to challenge for applying the standard arbitrarily or capriciously. See 735 F.2d at 1448 n. 20.

Here, we are unable to determine from the Appeal Board's terse explanation whether it acted properly in applying the fundamental flaw concept.

The Board simply stated the conclusion that the purported weaknesses in the training of Technical Support Center and Emergency Operations Facility staff could be readily corrected through minor modifications in operating procedures or supplemental training and would not require any revision in the onsite plan. ALAB-918, 29 N.R.C. at 485-86. Once again, this judgment does not meet the allegations set out in petitioners' contention and in the Pollard Affidavit concerning adequate compliance with specific planning standards. Moreover, in a second affidavit, filed in response to the NRC's September 28 follow-up inspection report, petitioners presented further evidence to support their claim that the alleged deficiencies had not been adequately addressed. See Second

Affidavit of Robert D. Pollard, Nov. 8, 1988.

We fail to see how the Appeal Board could reasonably determine the materiality of this contention under the fundamental flaw rubric without considering the supporting allegations. The LILCO opinion relied on by the Appeal Board draws a distinction between fundamental flaws and "[m]inor or isolated problems on the day of the exercise" that can be "readily corrected." ALAB-903, 28 N.R.C. at 505, 506, cited in ALAB-918, 29 N.R.C. at 485. There would appear to be a substantial variance between such nonfundamental deficiencies and the serious shortcomings in staff competency alleged in the Pollard Affidavit.

Accordingly, we must grant the petition for review of this issue and remand ALAB-918 to the Appeal Board for further consideration of the materiality of petitioners' exercise contention.

As is apparent, we disagree with the NRC and PSNH that this issue was mooted by the September 1989 exercise of Seabrook's onsite plan. Appendix E of the emergency planning regulations calls for a prelicense onsite drill if the full participation exercise occurs more than a year before full power licensing. 10 C.F.R. Part 50, Appendix E.IV.F.1. We do not believe that such an onsite exercise is intended to supersede the full participation drill, and thus we reject the NRC's contention that the onsite exercise becomes the "legal underpinning" for approval of the

full power license. Supplemental Brief for Respondents at 6. The Licensing Board essentially rejected the view now adopted by staff counsel when it described the purpose of the more limited onsite drill: "to ensure that emergency response personnel retain sufficient knowledge and expertise to actuate an emergency [plan] already determined through a reasonably current 'full participation' exercise to be adequate and without fundamental flaws." LBP-89-38, 30 N.R.C. 725, 744-45 (1989) (emphasis added).

[24,25] In granting the petition for review of ALAB-918, we do not vacate the authorization of Seabrook's operating licenses. In appropriate cases, we will remand without vacating an agency's order where the reason for

the remand is a lack of reasoned decisionmaking. E.G., International Union, UMW v. Mine Safety & Health Admin., 920 F.2d 960, 967 (D.C. Cir. 1990). "Relevant to the choice are the seriousness of the order's deficiencies (and thus the extent of doubt whether the agency chose correctly) and the disruptive consequences of an interim change that may itself be changed." Id.

On the record before us, only the allegations and affidavits offered by petitioners provide a basis for concern about the adequacy of onsite preparedness. Although we are unwilling to conclude that the September 1989 onsite exercise fully tested all aspects of emergency planning potentially implicated by petitioners' contention, we see nothing in the results of that

exercise to indicate any ongoing flaws in staff competency. Most important, we note that Seabrook was scheduled for a second full participation exercise in December 1990. A clean record in that exercise will likely moot this issue. Hence, we decide against imposing an immensely disruptive interim status quo that may itself be displaced by the Appeal Board's subsequent reasoning or by the more recent full participation exercise.

We therefore leave it to the Appeal Board to determine whether our opinion suggests any reason for altering the plant's licensing status. In particular, we have received from petitioners no guidance as to how, if at all, the Appeal Board's ruling in ALAB-918 may bear on the Commission's

decision to allow the authorization of full power operations. Because the full power license necessarily depends upon the resolution of all issues material to low power licensing, including the adequacy of the onsite emergency plan, this question merits the agency's consideration.

III. CONCLUSION

We deny the petitions for review of Seabrook's full power license in Nos. 90-1132 and 90-1218. The Commission's interpretation of its emergency planning regulation does not do violence to the language of the rule and is within the agency's statutory discretion, and the related decision to exclude the Sholly/Beyea testimony was not arbitrary

or capricious or otherwise unlawful. Furthermore, the Commission did not abuse its discretion in allowing the immediate effectiveness of the full power authorization. The decision denying a waiver of the agency's financial qualification exemption is not a final order, and petitioners' challenge to that ruling is not properly before us.

The low power licensing petition in No. 89-1306 is denied in part and granted in part. The Appeal Board acted reasonably in interpreting the scope of petitioners' cooling system contention, and we deny review of ALAB-899. We are, however, unable to conclude that the Appeal Board properly considered petitioners' rights under section 189 when it rejected their onsite exercise

contention. For that reason, we grant the petition for review of ALAB-918 and remand this ruling for reasoned decisionmaking. This conclusion, however, does not give us reason to disturb Seabrook's operating licenses.

So ordered.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Kenneth M. Carr, Chairman
Thomas M. Roberts
Kenneth C. Rogers
James R. Curtiss
Forrest J. Remick

In the Matter of	)	
	)	Docket Nos.
PUBLIC SERVICE COMPANY	)	50-443-OL
OF NEW HAMPSHIRE, ET AL.	)	50-444-OL
	)	
	)	Offsite
(Seabrook Station, Units	)	Emergency
I, and 2)	)	Planning

MEMORANDUM AND ORDER
CLI-90- 02

I. Introduction

In ALAB-922, 30 NRC 247, issued on October 11, 1989, the Appeal Board certified a question to the Commission for resolution, pursuant to 10 CFR / 2.785(d), under which the Appeal Board may "certify to the Commission for its

determination major or novel questions of policy, law or procedure." The question certified was the following:

> "Whether the MassAG's [Massachusetts Attorney General's] testimony, which seeks to address the dose reductions/dose consequences that will arise under the NHRERP [New Hampshire Radiological Emergency Response Plan), is admissible as relevant to a determination of whether, in accordance with the Commission's Shoreham guidance, the NHRERP will achieve reasonable and feasible' dose reduction under the circumstances so as to provide 'reasonable assurance that adequate protective measures can and will be taken' in accordance with 10 C.F.R. § 50.47(a)."

30 NRC at 259.

For the reasons which follow, we have determined that the testimony proffered by the Massachusetts Attorney General was admissible neither for the purpose mentioned by the Appeal Board

nor for any other. To explain the basis of our decision requires us to set forth in some detail the context in which the admissibility of the proffered testimony was considered by the two Boards.

II. Proceedings before the Licensing Board

The Massachusetts Attorney General, in a contention first offered in 1983 and resubmitted in 1986, charged that the New Hampshire plan did not, as required by 10 CFR § 50.47(a), provide "reasonable assurance that adequate protective measures can and will be taken" in an emergency, because on a summer weekend, with the nearby beaches densely populated by transients, evacuation would fail to protect persons on the beach under many plausible meterological conditions, and inadequate

provisions had been made for sheltering these persons. The applicants objected to this contention on the grounds, first, that the NRC's emergency planning regulations were not intended to guarantee absolute protection or a given level of protection, and second, that to litigate the contention would in effect be to relitigate the decision to site the plant at Seabrook. The staff opposed the contention to the extent it could be interpreted as seeking to litigate the dose consequences of any specific accident or as asserting that emergency planning must achieve a particular level of dose protection to the public, but would have allowed its admission to the extent it constituted a challenge to the adequacy of the

sheltering provided for the beach population.

The Licensing Board rejected the proposed contention on April 29, 1986. The Commission's rules, it said, did not require a zero risk standard, but rather the development of emergency plans with the flexibility to ensure response to a wide spectrum of accidents. The Massachusetts Attorney General, said the Licensing Board, was seeking to have each of the responses within the range of protective responses provide absolute assurance, whereas the intent of the rules was to assure that any one or a combination of responses would provide the requisite reasonable assurance. The Licensing Board agreed with the staff that particular postulated accidents were inappropriate for litigation, and

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that the regulations did not require that any particular level of radiological does reductions be achieved.

The Massachusetts Attorney General sought review by the Appeal Board, but the Appeal Board, in ALAB-838, 23 NRC 585 (1986), held the appeal to be interlocutory, since Massachusetts could continue to participate in the proceeding as an interested state. As an interested state, therefore, the MassAG tried again in September 1987, offering testimony as to the technical basis for the NRC's emergency planning rules; radiation doses to the public which would result from an accident at Seabrook; the potential for an atmospheric release; and the probable health consequences of the foregoing.

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The MassAG argued that this testimony was germane, since it illuminated the actual level of protection afforded the public, a necessary part of a "reasonable assurance" finding. The regulations, said the MassAG, called for a range of protective measures, but here, the plan did not provide for sheltering. The MassAG urged that while the Board was not required to make specific dose savings findings, or to calculate the number of people who would be injured in an accident, it was nevertheless required to accept evidence on those issues in order to determine the adequacy of the protective measures provided by the emergency plan.

Applicants objected to the offer of proof, arguing that it was an effort to

reintroduce the contention rejected earlier, and that the evidence was irrelevant, since it purported to show dose savings and consequences in absolute terms, whereas the regulation only required a showing that the emergency plan "is designed to achieve reasonable and feasible dose savings given the circumstances of the site in question." The staff agreed with the applicant.

In a bench ruling on November 17, 1987, the Licensing Board determined that the proposed testimony was outside the scope of the Commission's emergency planning requirements, as outlined in three Commission pronouncements on emergency planning. TR 5594. First, the Licensing Board said, the 1983 San Onofre decision (Southern California

Edison, San Onofre Nuclear Generating Station, Units 2 and 3, CLI-83-10, 17 NRC 528, 533), had emphasized that with regard to emergency planning,

> The emphasis is on prudent risk reduction measures. The regulation does not require dedication of resources to handle every possible accident that can be imagined. The concept of the regulation is that there should be core planning, with sufficient planning flexibility to develop a reasonable ad hoc response to those very serious low-probability accidents which could affect the general public.

Second, the Licensing Board looked to the Commission's 1986 decision in Long Island Lighting (Shoreham Nuclear Power Station, Unit 1), CLI-86-13, 24 NRC 22, where the Commission said:

> The root question becomes whether the LILCO plan can provide for "adequate protective measures in the event of a radiological emergency." [Footnote omitted.) ... This root question cannot be answered without some discussion of what is meant by "adequate protective measures." Our emergency

> planning regulations are an important part of the regulatory framework for protecting the public health and safety. But they differ in character from most of our siting and engineering design requirements which are directed at achieving or maintaining a minimum level of public safety protection. See, e.g., 10 C.F.R. § 100.11. Our emergency planning requirements do not require that an adequate plan achieve a preset minimum radiation dose saving or a minimum evacuation time for the plume exposure pathway emergency planning zone in the event of a serious accident. Rather, they attempt to achieve reasonable and feasible dose reduction under the circumstances.

Finally, the Licensing Board cited the then newly issued final rule in the 1987 rulemaking on emergency planning, where the Commission said:

> The final rule makes clear that every Emergency Plan has to be evaluated for adequacy on its own merits, without reference to the specific dose reductions which might be accomplished under the plan, or to the capabilities of any other plan. 52 Federal Register 42078, 42084 (November 3, 1987).

The Licensing Board concluded that the proffered testimony, despite sincere efforts to argue otherwise, involved "specific assumptions of doses, dose consequences, health effects, and the entire array that the Commission stated is not part of consideration." TR 5608.

B. Proceedings before the Appeal Board

The issue of the exclusion of the proffered testimony came before the Appeal Board on its review of the Licensing Board's December 31, 1988 Partial Initial Decision on the New Hamphsire emergency plan. In ALAB-922, issued on October 11, 1989, the Appeal Board provided a different analysis of the issue from that of the Licensing Board. It declared that the focal point of the dispute was where the emergency planning regulations, with their

requirement of "reasonable assurance," fit into the two-tiered regulatory scheme of the Atomic Energy Act. The Appeal Board explained that the Commission's safety regulations are either standards necessary to provide first-tier "adequate protection" (as authorized by Section 182(a) of the Atomic Energy Act) or are second-tier "extra-adequate protection" (measures over and above what is needed for adequate protectior) as authorized by Sections 161(b) and (i) of the Atomic Energy Act. The distinction between the two was recognized, said the Appeal Board, in UCS v. NRC (UCS 1), 824 F.2d 108 (D.C. Cir. 1987).

The intervenors, said the Appeal Board, claimed that 10 CFR § 50.47 was a first-tier "adequate protection"

standard, and that the Commission could not determine whether "adequate protection" was provided without evaluating the degree to which the emergency plan still left the public at risk. This argument, said the Appeal Board, was "promptly dispelled" by an examination of the 1980 rulemaking that promulgated 10 CFR § 50.47. In that rulemaking, the Commission cited as its authority Sections 161(b), (i), and (o) of the Atomic Energy Act. In the Appeal Board's words, "it is hard to imagine a more compelling indication that ... emergency planning requirements are intended to be second-tier, AEA section 161 safety provisions rather than a first-tier, 'adequate protection' requirement under AEA Section 182." 30 NRC at 256-57. Thus the Appeal Board

had "no difficulty" rejecting the intervenors' argument that the proffered testimony was admissible to show that even with the New Hampshire emergency plan in place, operation of the plant presented such risks as to fail the "adequate protection" test. 30 NRC at 257-58.

The Appeal Board found "more compelling" the argument that the evidence should be admitted to show (in accordance with Shoreham's guidance that emergency plans should seek to achieve "reasonable and feasible dose reductions") whether the dose reductions achievable by the New Hampshire plan were "reasonable." Clearly, said the Appeal Board, the reductions would be "feasible," since the plan had been prepared by state officials; but a "more

compelling case" was presented by the argument that those dose reductions would not be "reasonable." if, as contenced by the Massachusetts Attorney General, they would result in little realistic dose reduction and lead to doses with serious health consequences. To this, the Appeal Board noted, applicants and staff answered that all information on dose consequences and dose reductions was beside the point, since the Commission had made clear in Shoreham that no preset dose reductions or evacuation times were called for, and the 1987 rule had declared that plans were to be evaluated for adequacy "without reference to the specific dose reductions which might be accomplished under the plan." 30 NRC at 258, citing 52 Fed. Reg. 42,078, 42,084 (1987).

The Appeal Board thus found itself pulled between what it considered to be two contradictory lines of analysis: Shoreham's emphasis on "reasonable" dose reductions and the "perhaps superseding" guidance of the 1987 rule, in which the determination of 'specific dose reductions" was ruled out. The latter approach, the Appeal Board said, suggested that "given the 'extra-adequate protection' status of emergency planning requirements," review of emergency plans should concentrate not on a subjective judgment of whether the protection afforded to the public is "adequate," but rather on conformance with the requirements of the regulation and the pertinent NRC/FEMA criteria. Accordingly, the Appeal Board certified to the Commission the question of

whether the MassAG's testimony was admissible as relevant to a determination of whether the New Hampshire plan would achieve "reasonable and feasible dose reduction under the circumstances" so as to provide "reasonable assurance that adequate protective measures can and will be taken." 30 NRC at 259.

On October 20, 1989, the Massachusetts Attorney General asked the Appeal Board to reconsider its decision that emergency planning regulations represented a "second-tier" or "extra-adequate" level of protection under Section 161 of the Atomic Energy Act rather than "first-tier" protection under AEA Section 182. The petition urged that the transcript of the 1980 Commission meeting at which the language

of the emergency planning rule was crafted was evidence that the Appeal Board erred on this central point. The Massachusetts Attorney General argued that the citation to Section 161 in the 1980 rulemaking was without significance, and it noted that the Commission's fire protection rule by the NRC's own account a first-tier "adequate protection" standard had been issued under Section 161. The petition also noted that the two-tier theory had not been articulated until years after the 1980 rulemaking on emergency planning. Massachusetts offered a different explanation of the citation to Sections 161(b), (i), and (o): to assure that criminal sanctions set forth in 42 U.S.C. Section 2273 would apply. A

similar petition was filed by the Seacoast Anti-Pollution League.

On October 23, the Appeal Board summarily denied the petitions for reconsideration, on the grounds that the issues raised in them were so linked to those involved in the question certified to the Commission for decision that they should be resolved by the Commission rather than the Appeal Board.

III. Filings of the Parties

In response to a briefing schedule issued by the Commission on October 13 (modified by an extension of time granted to the NRC staff), the parties filed their briefs between October 27 and November 13, 1989. The positions of the parties may be sunnarized as follows.

1. Intervenors

Intervenors assert that the Appeal Board erred when it held, based on the citation to Section 161 of the Atomic Energy Act in the 1980 emergency planning rulemaking, that emergency planning was a second tier, 'extra-adequate" safety measure. The transcript of the 1980 Commission meeting that preceded adoption of the rule makes clear that the key phrase "adequate protective measures" in the regulation was specifically intended to track the phrase "adequate protection" in Section 182 of the AEA. The choice of words was designed to assure that "best efforts' would not be enough, and that energency planning measures would also have to be effective in protecting the public. In recognition that the

discussion was crucial to a correct understanding of the Commission's intent, the Commissioners directed that the transcript be included in the rulemaking record.

According to the intervenors, the Appeal Board, in relying on the citation to Sections 161(b), (i), and (o) -- an issue which the Appeal Board itself raised, none of the parties having done so -- ignored the 1980 Authorization Act in which Congress directed the NRC to develop emergency planning regulations. Although the Commission's final rule in 1980 included a statement that the rule was consistent with the Authorization Act, that Act did not appear in the list of authorities. Thus the list is incomplete on its face. Furthermore, the Commission has named Section 161 as

the sole basis of such safety-based rules as the fire protection rule, cited by the Commission in an appellate brief as an example of a first-tier "adequate protection" backfit. In reality, the citations to Sections 161(b), (i), and (o) simply designate regulations to which criminal penalties under 42 U.S.C. 2273 are intended to apply. Any doubt is eliminated when it is recognized that in the 1980 version of 10 CFR, the General Design Criteria of 10 CFR Part 50, Appendix A, were not described as based on Section 182.

Intervenors claim that the Appeal Board's quotation from the Commission's 1986 Shoreham decision was misplaced. Although some of the quoted language might suggest that emergency planning was not designed to achieve or maintain

a regulatory minimum of protection, the 1980 rulemaking was unambiguous on that point, and it is controlling. Indeed, in 1983 the Commission, in response to a Congressional question, made clear that it saw emergency planning as a matter of adequate protection, not -- as in the days before the TMI accident -- a "secondary but additional measure to be exercised in the unlikely event that an accident would happen."

Likewise, say the intervenors, the Appeal Board should have given no weight to the Commission's statements in the 1987 rulemaking that suggested emergency planning was of second-rank importance. First, the context in which the 1980 Commission spoke of emergency planning as needed to "bolster" other safety measures was one which (as described

above) contrasted the pre-TMI and post-TMI approaches. Moreover, even the Commission in 1987 conceded that it was not possible to resolve the issue of the intended significance of emergency planning through "microscopic" analysis of the 1980 language. As for the 120-day clock, that provision did not reveal a differerice between emergency planning and other safety regulations, but rather a resemblance, in that other types of regulations also do not require automatic shutdown. Moreover, the 1980 regulation reflected a compror,,ise, with new and existing plants handled differently. For new plants such as Seabrook, an adequate emergency plan was essential to operation. In fact, the reason tor the 120-day clock was not a casual view of emergency planning, but

rather a recognition that the NRC did not have the power to compel the cooperation of state and local governments.

In the intervenors' view, the phrase "adequate protective measures' in Section 50.47(a)(1) has a plain meaning that must be acknowledged. The Appeal Board never addressed the intervenors' argument that whatever the Commission thought about emergency planning in 1987, it still considered emergency planning to be part of the first-tier adequate protection framework. The Commission would never have countenanced the huge sums that utilities have spent on emergency planning since 1980 if those requirements were not viewed as necessary for adequate protection. The Appeal Board did not deal with the 1980

Authorization Act, in which Congress made clear that emergency planning was designed to prevent "public endangerment," ie., first tier. In statements to the Congress, Commissioners made clear that they shared Congress' view that emergency planning regulations were in place to assure "adequate protection."

Once it is recognized, say the intervenors, that emergency planning is a first tier safety standard, then there are three different approaches under which the Massachusetts Attorney General's proffered testimony is admissible: (1) to contribute to a case-by-case evaluation of whether the risk posed by operation of Seabrook is acceptable; (2) for a determination of whether a "range of protective

measures," as required by the planning standards of Section 50.47(b), have been provided; and (3) to judge whether the plan achieves "reasonable and feasible dose reductions under the circumstances," to quote the Commission's 1986 Shoreham decision. The phrase "under the circumstances" should be understood to refer simply to the case-by-case nature of the inquiry, not to suggest that a "best efforts" showing is all that is needed. The Commission's November 1987 final emergency planning rule rejected a "best efforts" approach.

Finally, intervenors argue, there is no "exclusionary rule" in NRC proceedings that would bar testimony on dose consequences. The evidence on dose reductions and dose consequences that

the Massachusetts Attorney General has sought to introduce is plainly relevant to the adequacy of the emergency plan. The only way that such obviously relevant evidence could be excluded is the existence of some policy barring its admission. Such an intent might account for the statement in the Commission's November 1987 rule that "every emergency plans is to be evaluated for adequacy on its own merits, without reference to the specific dose reductions which might be accomplished under the plan." It would be irrational, however, for the Commission, without ever having articulated a rational basis for doing so, to say in one breath that it will evaluate a plan's adequacy and in the next that it will not look at evidence plainly relevant to the plan's

adequacy. The NRC has expertise in evaluating dose consequences, which it routinely estimates in a variety of contexts.

For these reasons, intervenors urge, the Commission should reverse the Appeal Board's "second tier" findino and direct the Appeal Board to proceed with its review of LBP-88-32 accordingly. Alternatively, it should go further and indicate that the proffered testimony was relevant and material and should have been admitted.

2. Applicants

The precise question posed by the Appeal Board, say the applicants, was whether the reference in Shoreham to the objective of achieving "reasonable and feasible dose reduction" meant that evidence on dose savings and dose

consequences should be admitted. In the context in which the Commission used that phrase, 'reasonable" referred to dose savings achievatle without disproportionate cost. This position is consistent with San Onofre, CLI-83-10, 17 NRC 528, which said that the emergency planning rules emphasized "prudent" risk reduction measures, not extraordinary measures such as construction of new hospitals. The 1987 amendments to the Commission's emergency planning rules lay to rest any suggestion that the profferred testimony could be admissible. The proposed rule emphasized that the emergency planning rules were flexible, not aimed at achieving preestablished minimum dose savings. The final rule made the same point, declaring that findings as to

precise dose reductions "are never a requirement in the evaluation of emergency plans," and that emergency plans were to be evaluated individually, "without reference to the specific dose reductions which might be accomplished under the plan..... The foregoing demonstrates that the evidence proffered by the intervenors was irrelevant, since all that must be shown to satisfy the NRC's requirements is that the emergency plan is "designed to achieve reasonable and feasible dose savings given the circumstances of the site in question." Once that is shown, it is irrelevant "whether these dose savings will be high or low in absolute terms at a particular site in the circumstances of a given accident or class of accidents."

The Appeal Board was correct, applicants argue, in finding that the NRC's emergency planning rules, having been promulgated under Section 161 of the Atomic Energy Act, constitute "second tier" protection under the two-tier formula described in UCS I. Citations of authority are required by the Administrative Procedure Act, and are not merely some afterthought to which the agency may or may not give consideration. The 1980 Commission transcript on which intervenors rely is at best inconclusive. It does not remove the ambiguity as to the meaning of "adequate protective measures" in the regulation, but it does make clear that the emergency planning rules were not intended as a "site blocking" regulation. Moreover, the 1987

emergency planning rules commented on the "inconsistency" in the Commission's 1980 pronouncements on emergency planning.

According to applicants, the intervenors may be correct in saying that a reference to Section 161 does not necessarily designate a rule as "second tier," but in the case of the emergency planning rules, it is clear that the Commission intended second tier status. The fire protection rule, cited by intervenors as an "obvious example" of a first tier safety regulation which was issued under Section 161, actually demonstrates the opposite. In the list of authorities for Part 50 found at 52 Federal Register 41294, Section 161(b) is cited as authority for Section 50.48, for purposes of 42 U.S.C. Section 2273

(establishing criminal sanctions for violations). Sections 161 and 182 are both cited as authority, for Part 50. Thus the reference in the rulemaking to Section 161(b) was intended to identify § 50.48 as a regulation to which criminal sanctions would apply. With regard to § 50.47, however, the list of authorities for Part 50 does not mention § 50.47 specifically. However, the rulemaking listed Sections 161(b), 161(i), and 161(o). This fact, coupled with the absence of a statement that criminal sanctions would apply to the regulation, demonstrates that the Commission could only have intended § 50.47 to be a second tier regulation.

In the applicants' view, reference to statements made to the Congress by individual Commissioners deserve little

or no weight in determining whether the regulation is first or second tier. More to the point is the distinction which the Commission drew in Shoreham, CLI-86-13, between emergency planning regulations and siting and engineering design requirements "which are directed at achieving or maintaining a minimum level of public safety protection." such as 10 CFR § 100.11, which establishes the exclusion area and low population zone in terms of doses to individuals. This language clearly shows emergency planning regulations to be second tier.

Finally, say the applicants, the discussion in the Comission's 1987 proposed rulemaking makes clear that any ambiguity was to be resolved in favor of calling emergency planning rules second tier. The final rule made the further

point that the 120-day clock in the 1980 rule showed the second tier status of emergency planning requirements.

3. NRC Staff

According to the NRC staff, the Commission's regulations -- the plain wording of Section, 50.47(a)(1), the pertinent administrative history, and prior Commission interpretations -- all demonstrate that the Licensing Board was correct in excluding the proferred testimony. The regulation calls for determinations by FEMA on the adequacy and implementability of offsite plans, in accordance with planning standards of Section 50.47(b). The regulation does not provide for a dose reduction/dose consequences analysis, but rather for a review of the plans against the standards to see if they are adequate

and implementable. The Statement of Considerations of the 1980 rule did not indicate that there was to be any examination of radiological doses and consequences. The Commission there recognized that FEMA was best suited to assess offsite emergency preparedness. The NRC final rule restated, and cited, the guidance of NUREG-0654/FEMA-REP-1, which states that the planning basis for the standards was a spectrum of accidents, independent of specific accident sequences. Thus the Commission intended that individual licensing cases look at conformance with the standards, not at particular accident sequences or their consequences.

The NRC staff asserts that in San Onofre, CLI-83-10, 17 NRC 528 (1983), the Commission refuted the concept that

dose reduction calculations are needed or relevant. In Shoreham, the Commission focused on "reasonable and feasible dose reductions under the circumstances," not on achieving "a preset minimum radiation dose saving or a minimum evacuation time." This was a plain indication that there was to be no consideration of absolute dose reduction or consequences at particular sites. While Shoreham could be read in the manner outlined by the Appeal board to allow dose savings and consequences to be litigated as part of determining whether dose reductions achieved by a plan are "reasonable," the decision, when read in context, emphasizes that plans are to be judged against "standards" rather than on the basis of dose and risk calculations. That point

was reiterated several times in the 1987 final rule on emergency planning. That same rule made clear that plans were to be judged without reference to the specific dose reductions that might be accomplished under a particular plan.

It is immaterial, says the NRC staff, whether emergency planning is a first tier or second tier regulation, for in either case, the proffered testimony was irrelevant. Intervenors' emphasis on emergency planning as a first tier, adequate protection standard seens to be based on the misconception that if the regulation is first tier, dose calculations are required to determine the adequacy of emergency plans. In fact, whether the regulation was adopted under Section 161 of the AEA (as these were) or Section 182, the

Commission's regulations do not call for dose calculations, but rather for conformity with standards set out in the regulations. In this regard they are like many of the Commission's most basic safety regulations, such as emergency core cooling standards and quality assurance requirements. If the intervenors wished to challenge the adequacy of the rule, they could have petitioned for a rule change, and they could have asked for a waiver of the rule in this case. Instead, they are attempting to engraft onto the rule requirements over and above those established by the Commission.

To answer the certified question directly, the NRC staff maintains, the phrase "reasonable and feasible dose reductions under the circumstances" in

Shoreham envisioned testimony not on dose projections and dose consequences, but on reasonable and feasible methods of dose reduction for a particular site under the circumstances existing there. The Licensing Board received such testimony and concluded, as had FEMA, that the New Hampshire emergency plan provided "for a range of protective actions."

IV. Discussion

1. "First Tier" vs. "Second Tier"

In approaching the issues presented by the certified question, it may be useful to begin by addressing, as a threshold matter, the Appeal Board's finding that emergency planning is a second-tier, "extra-adequate' protection requirement. We do so for the sake of clarifying this area of the Commission's

regulations, not because it is necessary to our decision. We agree with the NRC Staff that for the purpose of deciding whether the Massachusetts Attorney General's proffered testimony should have been admitted, it is immaterial whether the emergency planning regulations are considered first tier or second tier.

The issue of what the Commission intended when it put the emergency planning rule in place was discussed extensively in the proposed and final 1987 emergency planning rules and their Statements of Considerations. In the March 1987 proposed rule (52 Fed. Reg. 6980), the Commission commented on the inconsistency between some of the language of the 1980 rulemaking and the regulatory scheme that it actually put

in place. Writing after the promulgation of the backfit rule, the Commission in its March 1987 notice also squarely posed the question whether emergency planning should be considered first tier or second tier protection:

> On the one hand, the Commission stated that the new requirements, as well as proper siting and engineered safety features, were needed to protect public health and safety. Taken in isolation, these statements can be read as evidencing a Commission decision that emergency planning and preparedness as provided in those revised rules were to be treated as matters essential to safe operation of nuclear facilities and therefore to be imposed rigorously without regard to equity or cost.
>
> On the other hand, the Commission rejected an option in the rulemaking that could have led to automatic plant shutdown if adequate plans were not filed because of commenters' concerns about "unnecessarily harsh economic and social consequences to State and local governments, utilities, and the public." Operating plants were given very substantial grace periods .... These provisions are

> not consistent with the concept that emergency planning and preparedness are as important to safety as such engineered safeguards as reactor containments or emergency core cooling systems. ... Rather, these provisions reflect a different concept -- that adequate emergency planning and preparedness are needed and important, but that they represent an additional level of public protection that comes into play only after all of the other safely requirements for plant design, quality construction, and careful, disciplined operation have been considered, and that therefore some regulatory flexibility is warranted and the costs associated with alternative approaches may be taken into account.

The Commission's notice asked for comment on which of the two approaches should be followed:

> a relatively inflexible one, that will require adequate planning and prtparedness with little or no concern for fairness or cost; or a more flexible one that focuses on what kind of accident riitigation (dose reduction to the public in the event of an

> accident) can be reasonably and feasibly accomplished, considering all of the circumstances. If sound safety reg-uration requires the former, then no rule change is warranted. If the latter, then a change would be in order.... ,in other words, the Comnission's March 1987 proposed rule recognized explicitly that to move from an "adequate protection" standard to a "second tier" or backfit standard, a rule change would be needed.

The Commission's November 1987 final rule, 52 Fed. Reg. 42078, disavoy,ed any interit xo move from the fornier to the latter approach. The Commission began its answer to the question, "Is emergency planning as important to safety as proper plant design and operation?", by declaring:

> First of all, this issue does not have to be addressed in the context of the final rule announced in this notice, since the present rule

> involves no redrawing by NRC of the balance between emergency planning and other provisions for the protection of health and safety.

The Commision then went on to discuss the words used in the 1980 rule, noting that in places, emergency planning was desibribed as "essential" and "needed," whereas elsewhere emergency planning was described as "bolstering" the protection offered by engineered design features. The issue, said the Commission, could not be resolved definitively by "microscopic analysis" of the language of the 1980 notice. More relevant, said the Commission, was the regulatory structure put in place, in particular the "120-day clock":

> In 10 CFR 50.54(s)(2)(ii), the Commission provided that if it "finds that the state of emergency preparedness does

not provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency . . . and if the deficiencies . . . are not corrected within four months of that finding, the Commission will determine whether the reactor shall be shut down until such deficiencies are remedied or whether other enforcement action is appropriate. In other words, a plant ordinarily may operate for at least four months with deficiencies in emergency planning before the NRC is required even to decide whether remedial action should be taken. . . . at the time that the Commission created the so-called "120-day clock" for deficiencies in emergency planning, it was settled Commission law (and remains so today) that the NRc must issue an order directing a license to show cause why its license should not be modified, revoked, or suspended whenever it concludes that "substantial health or safety issues ha[ve] been raised about the activities authorized by the license. . . . in the context of that standard, the 120-day clock provision for emergency planning

> deficiencies amounts to a Commission finding that, at least for the first 120 days, even a major deficiency in emergency planning does not automatically raise a "substantial health or safety issue" with regard to plant operation. By contrast, a major safety deficiency relating to emergency conditions -- for example, the availability of the emergency core cooling system -- would warrant inirtiediate shutdown.
>
> In sum, despite language indicating that emergency planning was "essential," the Commission in 1980 created a regulatory structure in which emergency planning was treated somewhat differently, in terms of the corrective actions to be taken when deficiencies are identified from the engineered safety features ("hardware") that would be relied on in an emergency.

The foregoing discussion from the 1987 final rule helps to clarify the real nature of the issue in dispute. The relevant consideration is not whether emergency, planning as a general

matter is a part of "adequate protection" or of "extra-adequate protection." The Commission's rulemakings of 1980 and 1987 establish that it is the former. (We do not share the Appeal Board's view of the significance of the citation to Section 161 in the 1980 rulemaking.) To frame the issue in terms of a simple choice between "adequate" and "extra-adequate" protection is to lose sight of the reality that when the Commission enumerates the many individual safety issues which must be resolved in order to find "adequate protection," it is not thereby declaring that all those component issues are of equal safety significance, or that the same standards for demonstrating compliance are applicable to all.

For illustration, one need only consider the gamut of issues presented in 10 CFR 50.34(b), dealing with the Final Safety Analysis Report. These include: a description of the reactor coolant system, instrumentation and control systems, electrical systems, containment system, and other engineered safety features (50.34(b)(2)(i)); the applicant's organizational structure and personnel qualifications requirements (50.34(b)(6)(i)); plans for conduct of normal operations, including maintenance, surveillance, and periodic testing of structures, systems, and components (50.34(b)(6)(iv)); plans for coping with emergencies (50.34(b)(6)(v)); a description of the operator requalification program (50.34(b)(8)); a description of

protection provided against pressurized thermal shock events, including projected values of the reference termperature for reactor vessel beltline materials (50.34(b)(9)); plans for physical security at the facility (50.34(c)); and safeguards contingency plans for dealing with threats, thefts, and sabotage (50.34(d)). Plainly, each of these component determinations has safety significance, and since none can be dispensed with, all can be called "essential"; but no one would claim that each is of identical weight in contributing to public protection. Nor would anyone assert that the same type of analysis is appropriate for each. Necessarily, the kind of highly technical inquiry appropriate to determining the adequacy of the plant's

hardware will not resemble either the "human factors" analysis applied to the utility's operator requalification program, or the predictive judgments required for a decision on safeguards contingency plans.

The real issue, therefore, is not a judgment in the abstract about the place of emergency planning in the hierarchy of safety standards, or an exercise in semantics about the meaning of the word "essential." (So that there may be no misuriderstanding, let us make clear that adequate emergency planning is "essential," just as adequate lifeboats are essential for a liner carrying passengers at sea. But it is only common sense to acknowledge that emergency plans, like lifeboats, are a backstop, a second or third line of

defense that comes into play only in the extremely rare circumstance that engineered design features and human capacity to take corrective action have both failed to avert a serious mishap.) For our purposes today, the real issue is a much more straightforward question: what is the nature of the inquiry that the Commission, in recognition of the fact that emergency planning involves predicting the ability to respond to the unpredictable, has put in place for determining whether "adequacy," i.e., compliance with the Commission's emergency planning regulations, has been established?

2. How Adequacy is Determined

The Commission's emergency planning requirements are not obscure. In the text of the regulations, in rulemakings on the subject of emergency planning, and in adjudicatory decisions interpreting those regulations, the Commission has made clear that judgments on the adequacy of emergency planning are to be based on conformity with the 16 planning standards set forth in 10 CFR / 50.47(b). [Footnote in original]

110 CFR § 50.47(b) provides:

> The onsite and, except as provided in paragraph (d) of this section, off-site emergency response plans for nuclear power reactors must meet the following standards:
>
> (1) Primary responsibilities for emergency response by the nuclear facility licensee and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various

supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

(2) On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all times, timely augmentation of response capabilities is available and the interfaces among various onsite response activities and offsite support and response activities are specified.

(3) Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's near-site Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.

(4) A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information

provided by facility licensees for determinations of minimum initial offsite response measures.

(5) Procedures have been established for notification, by the licensee, of state and local response organizations and for notification of emergency personnel by all organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

(6) Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

(7) Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated

dissemination of information to the public are established.

(8) Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

(9) Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

(10) A range of protective actions have been developed for the plume exposure pathway EPZ for emergency workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

(11) Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

(12) Arrangements are made for medical services for contaminated injured individuals.

(13) General plans for recovery and reentry are developed.

(14) Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.

(15) Radiological emergency response training is provided to those who n)ay be called on to assist in an emergency.

(16) Responsibilities for plan developr,*nt and review and for distribution of emergency plans are established, and planners are properly trained.

For offsite planning, the regulations provide that the Federal Emergency Management Agency (FEMA) shall make "findinas and determinations as to whether State and local emergency plans are adequate and whether there is

reasonable assurance that they can be implemented." 10 CFR / 50.47(a)(2). This FEMA finding "will primarily be based on a review of the plans." Id. The same regulation also provides that "[i]n any NRC licensing proceeding, a FEMA finding will constitute a rebuttable presumption on questions of adequacy and implementation capability." 10 CFR § 50.47(c), which states that the Commission may decline to issue an operating license in case of "[f]ailure to meet the applicable standards set forth in paragraph (b) of this section," reinforces the point that adequacy is to be judged by conformity with the planning standards. Nothing in the regulation contains any suggestion that calculations of dose consequences are intended to play a role in the

evaluation of a plan's adequacy.

As the NRC staff pointed out in its brief, the 1980 rulemaking was in part a restatement of the guidance developed jointly by NRC and FEMA in NUREG-0654/FEF,A-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." That document, frequently quoted and relied upon in the 1980 rulemaking, states in part:

> The overall objective of emergency response plans is to provide dose savings (and in some cases immediate life saving) for a spectrum of accidents that could produce offsite doses in excess of Protective Action Cuides (PAGs). No single specific accident sequence should be isolated as the one for which to plan because each accident could have different consequences, both in nature and degree. Further, the range of possible

> selection for a planning basis is very large, starting with a zero point of requiring no planning at all because significant offsite radiological accident consequences are unlikely to occur, to planning for the worst possible accident, regardless of its extremely low likelihood. The NRC/EPA Task Force did not attempt to define a single accident sequence or even a limited number of sequences. Rather, it identified the bounds of the parameters for which planning is recommended, based upon knowledge of the potential consequences, timing, and release characteristics of a spectrum of accidents. Although the selected planning basis is independent of specific accident sequences, a number of accident descriptions were considered in the development of the guidance, including the core melt accident release categories of the Reactor Safety Study. At 6-7 (footnotes omitted).

In other words, consideration of specific accident sequences and their potential dose consequences has been

rendered unnecessary by the promulgation of generic guidance that incorporates and synthesizes data on a range of accidents and their consequences. Thus the seeming anomaly of excluding proffered evidence on dose consequences, where the objective of the inquiry is to reduce dose consequences, is in fact no anomaly at all. For it is by applying the generic guidance of the regulation's 16 standards to the review of individual emergency plans -- not by attempting to predict the effects of particular hypothetical accidents occurring under particular hypothetical conditions of weather, time of year, and time of day -- that the NRC satisfies itself that the goal of achieving dose reductions is met.

The Commission interpreted and explained its emergency planning requirements in the 1983 San Onofre decision, where it said:

> Since a range of accidents with widely differing consequences can be postulated, the regulation does not depend on the assumption that a particular type of accident may or will occur. In fact, no specific accident sequences should be specified because each accident could have different consequences both in nature and degree. Although the emergency planning basis is independent of specific accident sequences, a number of accident descriptions were considered in development of the Commission's regulations, including the core melt accident release categories of the Reactor Satety Study (WASH-1400). (Footnote omitted.)

Southern California Edison Co., (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-83-10, 17 NRC 528, 533 (1983).

The Comission further explained:

> It was never the intent of the regulation to require directly or indirectly that state and local governments adopt extraordinary measures, such as construction of additional hospitals or recruitment of substantial additional medical personnel, just to deal with nuclear plant accidents. The emphasis is on prudent risk reduction measures. The regulation does not require dedication of resources to handle every possible accident that can be imagined. The concept of the regulation is that there should be core planning with sufficient planning flexibility to develop a reasonable ad hoc response to those very serious low probability-accidents which could affect the general public.

In the 1986 Shoreham decision, CLI-86-13, 24 NRC 22, the Commission discussed the emergency planning regulations in language which appears to have left the Appeal Board with some uncertainty as to the nature of the inquiry called for. Among other things, the Commission said:

> Our emergency planning requirements do not require that an adequate plan achieve a preset minium radiation dose saving or a minimum evacuation time for the plume exposure pathway emergency planning zone in the event of a serious accident. Rather, they attempt to achieve reasonable and feasible dose reduction under the circumstances; what may be reasonable or feasible for one site may not be for another. 24 NRC 22, 30.

Referring to the fact that State and local governments were not participating in emergency planning for Shoreham, the Commission continued:

> But what should we regard as reasonable and feasible for Shoreham, where the governments refuse to cooperate? ... We could conceivably define what is reasonable and feasible dose reduction for Shoreham solely in terms of what LILCO itself can reasonably and feasibly achieve, but we are not prepared to do so. Rather, we might look favorably on the LILCO plan if there was reasonable assurance that it was capable of achieving dose reductions in the event of an accident that are generally comparable to what miaht be accomplished with government cooperation. ... In sum, we conclude that LILCO's plan should be measured against a standard that would require protective measures that are generally couparable to what might be accomplished with governmental cooperation.

24 NRC 22, 30, 32.

Recognizing that the language just quoted lent itself to the interpretation that findings on dose reductions are a part of the emergency planning inquiry, the Commission soon provided a clarification. In the final emergency planning rule, 52 Federal Register 42078 (November 3, 1987), the Commission stated:

The Commission currently believes that the planning standards of 10 CFR 50.47(b), which are used to evaluate a state or local plan, also provide an appropriate framework to evaluate a utility plan. Therefore ... a utility plan ... will be evaluated for adequacy against the sane standards used to evaluate a state or local plan.

The approach reflected in this rule amplifies and clarifies the guidance provided in the Commission's decision in Long Island Lighting Co., (Shoreham, Nuclear Power Station, Unit--I), CLI-BE-13, 24 NRC 22 (1986). ... That decision ... included larguage which could be interpreted as envisioning that the NRC must estimate the radiological dose reductions which a utility plan would achieve, compare them with the radiological dose reductions which would be achieved if there were a state or local plan with full

state and local participation in emergency planning, and permit licensing only if the dose reductions are literally comparable." Such an interpretation would be contrary to NRC practice, under which emergency plans are evaluated for adequacy without reference to numerical dose reductions which would be accomplished and without comparing them to other emergency plans, real or hypothetical. The final rule makes clear that every emergency plan is to be evaluated for adequacy on its own merits, without rererence to the specific dose reductions which might be accomplpished under the plan or to the capabilities of any other plan. It further makes clear that a finding of adequacy for any plan is to be considered generally comparable to a finding of adequacy for any other plan. (Emphasis added.)

52 Federal Register 42078, 42084-85.

Thus to the extent that Shoreham suggested that evidence might be taken on dose consequences, the guidance in the 1987 final rule superseded it completely. The final rule should have left little room for doubt as to the Commission's intent, which may be summarized as follows: Emergency plans are to be evaluated on their own merits, against the 16 planning standards of 10 CFR 50.47(b), with presumptive validity accorded to FEMA's expert judgments on offsite planning; that the evaluation does not entail consideration of the dose consequences that might be calculated under various hypothetical circumstances; and that a plan judged adequate against these planning standards is considered generally comparable to any other plan that has been found adequate.

Consistent with that guidance, we find that the Licensing Board acted correctly in excluding the proffered testimony. The Appeal Board, in suggesting that the testimony might be admissible for the purpose of determining whether "reasonable and feasible" dose reductions are accomplished by a plan, may have confused the objective of the emergency planning inquiry with the means used to accomplish the objective. The objective, plainly, is the achievement of reasonable and feasible dose reductions in the event of an accident. But the means which the Commmission has determined to use is an evaluation of emergency plans against the 16 planning standards developed by NRC and FEMA.

That determination, made by rule, is not for individual adjudicatory boards to alter. Parties dissatisfied with that approach may petition to change the rule, or they may attempt, by requesting a waiver of the rule, to show why it should not be applied to a particular case. The parties before us have chosen reeither of those courses of action. Accordingly, we find that there was no purpose for which the proffered testimony was admissible.

In concluding, we wish to make clear that this opinion does not decide whether emergency planning at Seabrook is adequate, nor whether that facility should receive a license to operate at full power. Rather, it provides, in accordance with our procedures for directed certification, guidance as to

how, under the Commission's rules, determinations on the adequacy of emergency planning are to be made.

It is so ORDERED.